

National Network for Environmental Management Studies (NNEMS)

PROGRAM CATALOG FY 2002



United States Environmental Protection Agency
Office of Environmental Education
Office of Communications, Education, and Media Relations
1200 Pennsylvania Avenue, NW (1704A)
Washington, DC 20460

http://www.epa.gov/enviroed

EPA 171-K-01-001 October 2001

National Network for Environmental Management Studies (NNEMS) Fellowship Program

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STRUCTURE

Objectives

The Environmental Protection Agency's National Network for Environmental Management Studies (NNEMS) Program is a federal government environmental fellowship program designed to:

- Provide students with a research/training experience
- Promote high-quality research efforts on environmental issues that are directly linked to a thesis or other school-related activity and that are in the interest of the public
- Create a catalyst for increased public awareness of and involvement in environmental issues
- Encourage students to pursue careers in environmental fields

Benefits

To students

- Acquire practical research/training experience
- Be compensated while researching important environmental issues

To universities

- Involve faculty in nationally significant environmental protection issues
- Expand faculty's professional network

GENERAL INFORMATION

Students are invited to submit applications to EPA on the projects contained in this catalog.

Graduate and undergraduate students are eligible to apply. Eligibility requirements are provided on page 2 in this catalog.

Recipients of fellowships receive a stipend based upon the level of education of the student and the duration and location of the research project.

The fellowships fall within the following categories, and are listed in the back of this catalog:

- Environmental Policy, Regulation, and Law
- Environmental Management and Administration
- Environmental Science
- Public Relations and Communications
- Computer Programming and Development

Applications for projects contained in this catalog will be accepted for consideration if postmarked on or before **February 8, 2002**. *Applications postmarked after February 8, 2002 will not be accepted.*

Negotiation

Applications postmarked on or before February 8, 2002 will be reviewed for eligibility requirements and sent to the respective project sponsors and a review panel for consideration. Panels will submit their recommendations to the NNEMS staff and to the project sponsors. Upon review, members of the panel and/or project sponsors may contact the students by phone to negotiate project details. Not all students will be called.

- The EPA sponsor will complete negotiations between sponsors and potential fellows no later than **March 30, 2002**.
- Students who have not been selected for a FY2001 NNEMS fellowship will be notified by mail sent to the permanent address listed on the resume, on or about April 30, 2002.

ELIGIBILITY REQUIREMENTS

Note: Federal employees, to include Federal employees on leave without pay status, are not eligible for this fellowship program.

ALL Students Must

- Be a citizen of the United States, its territories or possessions, or be lawfully admitted to the United States for permanent residence.
- Submit one letter of reference from a faculty member or department head very familiar with the student's work and qualifications; the letter must state how the research project will benefit the student's academic studies.

Undergraduate Students Must

- Be enrolled full- or part-time at an accredited institution in an academic program directly related to pollution abatement and control during the tenure of the fellowship.
- Have a 3.0 cumulative grade point average on a 4.0 scale.
- Have already completed four courses relating to the environmental field.
- Seniors who will be graduating prior to the completion of the advertised NNEMS fellowship period are ineligible unless they have been accepted into graduate school and can submit verification.

Graduate Students Must

- Have been accepted to or be enrolled full- or part-time at an accredited institution* in an academic program directly related to pollution abatement and control during the tenure of the fellowship.
- Have completed one semester of graduate work or at least four undergraduate courses relating to the environmental field. Students who are entering graduate school (i.e., who have not yet completed one semester of graduate work) will be asked to submit proof of application, acceptance, and enrollment if they are selected for a fellowship.
- Students who will be graduating prior to the completion of the advertised NNEMS fellowship are ineligible.

^{*} Note: The two-or-four-year college, university or distance learning institution must be accredited by an accrediting organization recognized by the U.s. Department of Education or the Council for Higher Education Accreditation.

HOW TO APPLY

There is no limit to the number of applications for projects that a student may submit for consideration.

If more than one application is submitted, please indicate the order of preference for application/selection.

A complete application package and three (3) photocopies of the complete application package must be submitted <u>for each project</u> for which a student is applying. Any application that is not accompanied by three photocopies of the complete package will not be processed.

Application Materials Required

To apply for a research project, submit the following:

- A complete resume
- NNEMS Disclosure and Waiver Statement (see the Application Materials appendix beginning on page 99 for the forms)
- Official college transcripts for each college or university attended. Photocopies of the official transcript may be made if more than one application is submitted. "Unofficial" transcripts also will be accepted in the case of multiple applications.
- A completed Research Project Proposal form. Proposals must adhere to the format contained in the appendix of this catalog. All required personal information must be included. (See Application Materials.)
- A letter of reference
- Application check list

Applicants must adhere to all eligibility requirements and may be required to provide additional information or documents. Students who are entering graduate school (i.e. who have not yet completed one semester of graduate work) will be asked to submit proof of application, acceptance, and enrollment if they are selected for a fellowship.

Written applications on projects contained in this catalog will be accepted for consideration if postmarked on or before February 8, 2002. Proposals postmarked after February 8, 2002 will not be accepted.

Mail Application Materials To

NNEMS Fellowship Program Attn: Applications SOLUTRON, INC. 1395 Piccard Drive Suite 308 Rockville. MD 20850

Remember to send your original application packet plus three photocopies.

For further program information, contact your NNEMS coordinator at your university or call Sheri Jojokian, NNEMS Program Manager, (202) 564-0452 between 9:00 am – 5:00 pm EST Monday through Friday. Information may also be obtained on the Office of Environmental Education's (OEE) Website at: http://www.epa.gov/enviroed

Students Selected

Students selected to receive a NNEMS fellowship will be notified by the EPA sponsor. Selected students will receive a stipend for performing their research project. The stipend will be paid out in the form of a grant to the student. The NNEMS staff will send a grant application kit to the student upon selection.

The grant is paid out in equal monthly installments. Each month, the student will receive one fraction of the total grant, based upon the project duration. A final report from the student must be submitted to the student's project sponsor and to the NNEMS staff immediately upon completion of the project period.

While EPA does not withhold any taxes nor generate a W-2 form, the stipend amount is taxable. Students must maintain a record of their stipend amount and file their own taxes. According to the latest Internal Revenue Service (IRS) rules, portions of the stipend may be tax exempt. Tax exempt funds include, for example, the portion of money sent directly to the student's school for tuition and supplies. These funds do not have to be reported to the IRS. The IRS recommends students pay taxes quarterly on large stipend amounts to avoid the potential for a penalty at the end of the year. Additional information for filing taxes on a fellowship grant can be located in the NNEMS Program Summary, Appendix B. Please contact the IRS for any further information and instructions needed on filing taxes on a fellowship grant.



University Coordinators FY 2002

NOTE: This list is not intended to exclude any eligible students from any other accredited* two-or four-year college or university, or on-line students participating in distance education. It is simply a listing of schools that have designated a staff member as a NNEMS University Coordinator.

*The college, university or distance learning institution must be accredited by an accrediting organization recognized by the U.S. Department of Education or the Council of Higher Education Accreditation.

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^{*}NOTE: This list is not intended to exclude any eligible students from any other accredited* two-or four-year college or university, or on-line students participating in distance education. It is simply a listing of schools that have designated a staff member as a NNEMS University Coordinator.

^{*}The college, university or distance learning institution must be accredited by an accrediting organization recognized by the U.S. Department of Education or the Council of Higher Education Accreditation.

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Dr. Hazo W. Carter, Jr., President P.O. Box 399 Institute, WV 25112

Ms. Patricia Kline, Director Career Services Office Campus Box 185 P.O. Box 1000 Institute, WV 25112-1000

Western State College of Colorado

Layne Nelson, Director Career Services College Union Gunnison, CO 81231

Wharton School

Ms. Janet R. Pack Policy & Management Department 3620 Locust Walk, Suite 3105, SH-DH/6 Philadelphia, PA 19104

Wheaton College

Mr. Dale Fenton Career Development Center 501 College Avenue Wheaton, IL 60187

Whittier College

Linda Ross Career Services P.O. Box 634 Whittier, CA 90608

Widener University

Mary Pennington, Director Career Advancement & Planning Services 1 University Place Chester, PA 19013-5792

William and Mary, The College of

Ilsa M. Kaattari Department of Biology P.O. Box 8795 Williamsburg, VA 23187-8795

Williams College

Ms. Kathleen Case Program Coordinator Stetson Hall Williamstown, MA 01267

Worcester Polytechnic Institute

Dr. Susan Vernon-Gerstenfeld Interdisciplinary Studies Division 100 Institute Road Worcester, MA 01609-2280

Xavier University

LaMoyne Williams Center for Environmental Programs 7325 Palmetto Street New Orleans, LA 70125

Yale University

Stanton C. Otis, Jr.
Dept. of Forestry & Environmental Studies
205 Prospect Street
New Haven, CT 06511-2189

Christy Bergheim, Career Counselor School of Public Health P.O. Box 208034 60 College Street New Haven, CT 06520-8034

^{*}NOTE: This list is not intended to exclude any eligible students from any other accredited* two-or four-year college or university, or on-line students participating in distance education. It is simply a listing of schools that have designated a staff member as a NNEMS University Coordinator.

^{*}The college, university or distance learning institution must be accredited by an accrediting organization recognized by the U.S. Department of Education or the Council of Higher Education Accreditation.

FY 2001 ENVIRONMENTAL PROJECTS

The following pages contain the NNEMS fellowships available at EPA. The fellowships are listed under these five categories:

■ Environmental Policy, Regulation, & Law

Topics in this category concern the review and evaluation of existing policies and regulations, as well as issues/research surrounding the development of new policies. Compliance with policies and regulations is also included.

■ Environmental Management & Administration

Topics in this category focus on environmental management goals.

■ Environmental Science

Topics in this category focus on field studies and laboratory research. The review of environmental policy and regulation requiring technical expertise is included in the Environmental Policy, Regulation, and Law category.

Public Relations and Communications

Topics in this category include the review and analysis of public response to EPA policies and regulations, as well as general public opinion of environmental issues. Also included in this category is the development of communication tools ranging from pamphlets and informational materials to slide and film presentations in order to inform and educate the public on environmental protection issues.

■ Computer Programming and Development

Topics in this category can include, for example, the development of computer software, the development of, or gathering information from databases, programming functions rerquired in laboratory work, etc.

 Disclaimer Statement: All research projects listed in this catalog will be funded subject to the availability of funds.



Environmental Policy, Regulation, and Law

Topics in this category concern the review and evaluation of existing policies and regulations, as well as issues/research surrounding the development of new policies. Compliance with policies and regulations is also included.

Project Number and Category: 2002-1001 Environmental Policy, Regulation, and Law

Sponsoring Office: Office of Prevention Pesticides and Toxic Substances (OPPTS)

Office of Pollution Prevention and Toxics (OPPT)

Pollution Prevention Division (PPD)

Office Mission/Responsibility: To integrate a multimedia pollution prevention ethic both within and

outside the EPA through support of pollution prevention efforts at the federal, state, and local levels, and to promote prevention of pollution over EPA's traditional pollution control and cleanup actions, essentially to

eliminate or reduce the creation of pollution in the first place.

Project Description: Environmentally Preferable Products: As directed by Executive Order

13101, Greening the Government Through Waste Prevention, Recycling, and Federal Acquisition, the federal government is committed to environmentally preferable purchasing, that is, purchasing the products and services that have the least impact on the environment. EPA's Final Guidance on Environmentally Preferable Purchasing outlines the federal governments approach for incorporating environmental considerations

into its purchasing decisions.

The student will benefit in this project by understanding the current efforts being undertaken nationally at all levels of government to promote the purchasing of green products and the difficulty purchasers have in trying to determine what the environmental impacts are in products. The project will also help consumers and the general public have a better awareness and understanding of what the environmental

impacts are in products.

Project Goals: The NNEMS fellow will identify existing programs and opportunities

to expand environmentally preferable purchasing at the federal, state and local levels in order to advance Executive Order 13101.

Greening the Government Through Waste Prevention, Recycling and

Federal Acquisition.

Desired Level of Education: 1st year graduate student

Project Location: EPA Headquarters, Washington, DC

Preferred Project Period: June 2002 - May 2003

(12 months)

Sponsor Information: Lena Ferris

Phone: 202 564 8831 Fax: 202 564 8899

E-mail: ferris.lena@epa.gov

Project Number and Category: 2002-1002 Environmental Policy, Regulation, and Law

Sponsoring Office: Office of Prevention Pesticides and Toxic Substances (OPPTS)

Office of Pollution Prevention and Toxics (OPPT)

Pollution Prevention Division (PPD)

Office Mission/Responsibility: To integrate a multimedia pollution prevention ethic both within and

outside the EPA through support of pollution prevention efforts at the federal, state, and local levels, and to promote prevention of pollution over EPA's traditional pollution control and cleanup actions, essentially to

eliminate or reduce the creation of pollution in the first place.

Project Description: The student will participate in implementing a Pollution Prevention

project, which will focus on reducing or eliminating pollution from a significant source. This source could be at the state or federal level. In addition, under the authority of the Pollution Prevention Act of 1990, the EPA awards multimedia pollution prevention grants to states annually. The Pollution Prevention Incentives for States (PPIS) grant program was originally established to foster states acting as primary leaders in encouraging industry, small and medium-sized business, local

governments, and the public to shift priorities from pollution control to

pollution prevention.

Project Goals: The student will research different state and federal pollution prevention

activities and compile resource information to assist the states in developing and managing their pollution prevention programs as a result of the pollution prevention state grants awarded by EPA. The student will also help to generally expand the outreach activities of the Pollution

Prevention Division.

Desired Level of Education: 1st year graduate student

Project Location: EPA Headquarters, Washington, DC

Preferred Project Period: June 2002 - May 2003

(12 months)

Sponsor Information: Lena Ferris

Phone: 202 564 8831 Fax: 202 564 8899

E-mail: ferris.lena@epa.gov

Project Number and Category: 2002-1003 Environmental Policy, Regulation, and Law

Sponsoring Office: Office of Wetlands Strategies and State Programs Branch Wetlands

Division

Office Mission/Responsibility: Support efforts to improve/enhance wetlands protection, management

and/or restoration.

Project Description: The Wetlands Strategies and State Programs Branch is offering an

internship to learn various aspects of the wetlands program, including wetlands policy development; science support; outreach and strategy development in a diverse range of areas including integrating wetlands protection into other program areas (watershed management, nonpoint source and stormwater control, and water quality standards); and working with other levels of government (state/tribal/local) to build partnerships to better protect and restore wetland resources. The actual experience that the intern will gain will be negotiated depending on the student's interests and capability. Potential projects include, but are not limited to, researching state/tribal and local government needs to improve their ability to protect, manage and restore their wetlands; researching/learning how wetlands restoration techniques can be improved to better replicate wetland functions and values; researching how wetlands can be better integrated into watershed management approaches; and learning/developing techniques that states and tribes can use to evaluate the health of wetlands. This internship will provide excellent exposure and learning opportunities in a wide range of environmental, policy, resource planning, scientific and management

issues surrounding wetlands protection.

Project Goals: Improving/enhancing tools, science, programs and/or policies for

wetlands protection, management and restoration.

Desired Level of Education: 1st year graduate student or above

Project Location: EPA Headquarters, Washington, DC

Preferred Project Period: Negotiable start date

(6 months-12 months)

Sponsor Information: Lori Williams

Phone: 202 260 5084 Fax: 202 260 8000

E-mail: williams.lorraine@epa.gov

Project Number and Category: 2002-1004 Environmental Policy, Regulation, and Law

Sponsoring Office: Office of Enforcement, Compliance and Environmental Justice

Office Mission/Responsibility: Coordinating the use of enforcement and compliance assistance among

ERA Regional programs and the states, enforcing against violators of more than one law, and promoting equal public health and environmental

protection for all in the Mid-Atlantic area.

Project Description: The student will gain an understanding of businesses and environmental

matters by surveying facilities to determine the impact of compliance assistance/outreach project(s) on motivating facilities to improve environmental performance. The student will also gain experience in surveying, analyzing results, developing a report; and presenting the results to a group of people. The project will involve reviewing similar surveys, learning about regulatory requirements that are the subject of the compliance assistance, developing a survey plan including the facilities to be surveyed, formatting the survey, conducting the survey by phone and/or mail, using survey software to develop a report with charts and graphs, and presenting the results to ERA Region 3 enforcement and compliance people. This project will provide a student with valuable experience in learning about environmental requirements, measuring results and surveying techniques.

Note: EPA will clear the survey questions through 0MB prior to the

student's start date.

Project Goals: Measure the results of a Region 3 compliance assistance outreach

project.

Desired Level of Education: Senior or above

1styear graduate student or above

Project Location: EPA Region 3, Philadelphia, PA

Preferred Project Period: May 2002-August 2002

Sponsor Information: Janet Viniski

Phone: 215 814 2999 Fax: 215 814 2905

E-mail: viniski.janet@epa.gov

Project Number and Category: 2002-1005 Environmental Policy, Regulation, and Law

Sponsoring Office: The Resource Conservation and Recovery Act (RCRA)

Compliance and Enforcement Branch

Office Mission/Responsibility: Provide compliance assistance to the regulated community and citizens

concerning the proper management of hazardous wastes and underground storage tanks, and enforce RCRA regulations under Subparts C (Management of Hazardous Waste) and I (Underground

Storage Tanks) in all the states in the Mid-Atlantic area.

Project Description: The student will gain an understanding of businesses and environmental

matters by reviewing facility records to determine the need of compliance assistance to improve environmental performance. The student will develop a compliance assistance kit to provide assistance to the regulated community. Through this project, the student will gain experience in reviewing and analyzing data, developing a report, and presenting the results to a group of people. The project will expose the student to areas such as business sectors, EPA compliance databases, and regulatory requirements. The student will use software to develop a report with charts and graphs, and present the report to EPA Region 3 and state enforcement and compliance personnel. This project will provide the student with valuable experience in learning about

environmental regulatory requirements, different business sectors, and ways to educate and persuade businesses to improve environmental

performance.

Project Goals: Develop a compliance assistance kit for specific business sectors and

a list of facilities or sectors that are good candidates for receiving

compliance assistance.

Desired Level of Education: Sophomore, Junior or Senior

Project Location: EPA Region 3, Philadelphia, PA

Preferred Project Period: June 2002-August 2002

Sponsor Information: JoseJ. Jimenez

Phone: 215 8142148 Fax: 215 814 3163

E-mail: jimenez.jose@epa.gov

Project Number and Category: 2002-1006 Environmental Policy, Regulation, and Law

Sponsor Office: Innovative Strategies & Economics Group (ISEG)

Air Quality Strategies & Standards Division (AQSSD)

Office Mission/Responsibility: The Innovative Strategies & Economics Group provides the regulatory

analytical support for national stationary source emission regulation and the National Ambient Air Quality Standard programs. The scope of regulatory analytical support includes control strategy design and costing, economic impact, and benefit analysis as well as innovative

strategies such as trading and fee programs.

Project Description: The incumbent(s) applies their knowledge of economic theory and

principles within structure of salient Congressional Mandates, Executive Orders, and Judicial Rulings, Within this structure, the incumbent verifies and validates analytical procedures and findings performs sensitivity analyses, and develops graphical presentations of data and results. The potential scope of the project(s) includes benefit analysis, control strategy design and costing, economic impact assessment, and innovative strategies (including voluntary measures, trading, and fee programs), and benefit-cost analysis. Completion of the project includes presentation of results to senior professional and managers as well as delivery of associated technical reports. More than one project

may be funded.

Project Goals: The incumbent will better understand the effect of legislative, executive,

and judicial branch considerations on the structure and conduct of applied environmental economics. In addition, the incumbent will gain more insight regarding evaluation and application of analytical methods and data as well as a multi-discipline approach to regulatory analysis. The project will help improve the quality assurance, robustness, and communication aspects of selected regulatory and policy analyses products. Such attributes can enhance the credibility and understanding

of economic analysis in the formation and implementation of

environmental regulations and policy.

Desired Level of Education: Junior, Senior

1st year graduate studentorabove

Note: One or more students may be selected for this project.

Project Location: EPA, Research Triangle Park, North Carolina

Preferred Project Period: June 2002 to September 2002

Sponsor Information: Ronald Evans

Phone: 919541 5488 Fax: 919 541 0839

E-mail: evans. ron@epa.gov



Environmental Management and Administration

Topics in this category focus on environmental management goals.

Project Number and Category: 2002-2001 Environmental Management and Administration

Sponsoring Office: Office of Communications, Education and Media Relations (OCEMR)

Office of Environmental Education (OEE)

Office Mission/Responsibility: The mission of the Office of Environmental Education is to support

education efforts that develop an environmentally conscious and responsible public. As authorized under the National Environmental Education Act, OEE administers various programs such as grants, educator training, college fellowships, and youth awards. OEE also facilitates partnerships which support and advance the field of

environmental education.

Project Description: The purpose of this project is to conduct research on specific aspects of

environmental education. The student(s) will conduct research and prepare a paper documenting the results of research on one of the

following topic areas:

(1) How effective is environmental education (EE) in meeting environmental protection goals? Can it be demonstrated that EE is a valid tool in meeting the nation's environmental protection goals (such as clean air, clean water, safe foods, etc.)? What anecdotal evidence and research

studies support this cause and effect relationship?

(2) To what extent does EE improve student academic performance when integrated within various core subjects (such as science, social studies, language arts, etc)? What specific characteristics of an EE program and/or the instructional practices used have the greatest impact on student performance? What are the implications of this research for

linking EE with state and national education reform efforts?

OR

(3) How effective is EE training for educators in the U.S. (pre-service, inservice or nonformal education)? What are the most effective models

and why?

The graduate student(s) must work under the supervision of a faculty member who is knowledgeable about education and/or environmental

education.

Project Goals: To conduct research on aspects of environmental education that furthers

the field of environmental education.

Desired Level of Education: Graduate student is preferred

Note: One or more students may be selected for this project.

Project Location: The graduate student's academic institution

Preferred Project Period: Up to 3 years (part time) beginning September 2002

Sponsor Information: Ginger Keho (research topic #1)

Phone: 2025640453 E-Mail: keho.ginger@epa.gov Kathleen MacKinnon (research topics #2 & #3)

Phone: 202 564 0454 E-Mail: mackinnon.kathleen@epa.gov

Fax: 202 564 2754

Project Number and Category: 2002-2002 Environmental Management and Administration

Sponsoring Office: Office of Federal Activities (OFA), NEPA Compliance Division

Office Mission/Responsibility: OFA has the national program responsibility for reviewing major federal

actions significantly affecting the environment, as required under Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA). OFA ensures that EPA programs and activities comply with environmental laws and regulations, including NEPA, Endangered Species Act (ESA), National Historic Preservation Act (NHPA), and Executive Orders (EO) on Environmental Justice. OFA serves as the principal point of contact and liaison with other federal agencies and provides consultation and technical assistance to those agencies relating to EPA's areas of expertise and responsibility. OFA also manages the official filing activity for all federal environmental impact statements (EIS) in accordance with a memorandum of agreement with the Council of Environmental Quality for implementing the procedural

provisions of NEPA.

Project Description: OFA reviews approximately 500 major federal actions significantly

affecting the environment, and approximately 1500 environmental assessments (EA) of smaller federal projects with potential

environmental impacts, rules and/or regulations to ensure compliance with NEPA, ESA, NHPA and relevant EOs; to identify potential problems; and to ensure incorporation of needed environmental improvements.

The student will assist a lead analyst in conducting Section 309 process analysis and/or the review of specific EAs or EISs of assigned federal actions. Possible analytical efforts include evaluating the effectiveness of EPA's Section 309 review of EISs or working on issues dealing with surface transportation, airport expansion or hydropower/nuclear power plant relicensing. The participant may also be involved in the development of Agency orders and procedural guidelines for review of federal actions impacting the environment, such as the protection of

floodplains, wetlands, agricultural lands or timberlands.

Project Goals:To familiarize the student with NEPA requirements as they relate to

environmental protection, and to give the student an overall perspective on the role EPA plays in reviewing the significant environmental impacts of proposed federal actions and informing the public of these actions.

Desired Level of Education: Senior or above

Project Location: EPA Headquarters, Washington, DC

Preferred Project Period: June 2002 - August 2002 (13 week fellowship)

Sponsor Information: Ken Mittelholtz

Phone: 202564-7156 Fax: 202564-0072

E-Mail: mittelholtz.ken@epa.gov

Project Number and Category: 2002-2003 Environmental Management and Administration

Sponsoring Office: Office of Federal Activities (OFA),

International Enforcement and Compliance Division (IECD)

Office Mission/Responsibility: OFA is responsible for coordinating the Office of Enforcement and

Compliance Assurance (OECA); international activities for the trilateral

North American Commission for Environmental Cooperation

(CEC - which includes Canada and Mexico); the bilateral Mexico Border work; and in support of U.S. foreign policy commitments. OFA's international responsibilities are carried out under the National

Environmental Policy Act (NEPA), EPA's environmental laws, legislation implementing the North American Free Trade Agreement (NAFTA), other international free trade agreements and treaties, and other international

commitments.

Project Description: In support of the CEC responsibilities, OFA represents the U.S.

environmental enforcement interests at meetings with enforcement representatives from Canada and Mexico; prepares an annual report on how the U.S. is meeting its treaty obligations under the NAFTA

Environmental Side Agreement to effectively enforce U.S. environmental

laws; and negotiates annual work plans.

In support of the Mexico Border work responsibilities, OFA serves as the U.S. Co-chair of the Border XXI Enforcement Cooperation Work Group; develops annual work plans; and develops bilateral annual reports on

program accomplishments.

In support of U.S. foreign policy commitments, OFA manages the delivery of the international training module, "Principles of Environmental Compliance and Enforcement" and other self-supporting capacity building activities.

The student will assist in one or more of the above activities. (This NNEMS project will not require international travel).

Project Goals:To afford the student the opportunity to work on issues related to EPA's

involvement in international environmental enforcement and compliance assistance activities; various capacity building/training programs focusing on EPA's trilateral CEC obligations; bilateral Mexico Border work; and U.S. foreign policy commitments and treaties which protect

the nation's environmental interests.

Desired Level of Education: Senior or above

Project Location: EPA Headquarters, Washington, DC

Preferred Project Period: June 2002 - August 2002 (13 week fellowship)

Sponsor Information: Tim Whitehouse

Phone: 202564-2315 Fax: 202564-0073

E-Mail: whitehouse.tim@epa.gov

Project Number and Category: 2002-2004 Environmental Management and Administration

Sponsoring Office: Office of Environmental Innovation

Office Mission/Responsibility:To promote pollution prevention and innovative approaches to

environmental protection.

Project Description: The student will participate in implementing a Pollution Prevention (P2)

Project, which will focus on reducing or eliminating pollution from a significant source within the region, or will support the goals and objectives of the Region 3 P2 program. The project will include research on P2 opportunities for the identified source and an analysis of the

feasibility of implementation.

Project Goals: To submit a report on the research that furthers the efforts of the

Region's P2 program.

Desired Level of Education: Sophomore, Junior, or Senior

Project Location: EPA Region 3, Philadelphia, PA

Preferred Project Period: June 2002 - August 2002

(3 months)

Sponsor Information: Jeffrey J. Burke

Phone: 215 814 2761 Fax: 215 814 2783

E-Mail: burke.jeff@epa.gov



Environmental Science

Topics in this category focus on field studies and laboratory research. The review of environmental policy and regulation requiring technical expertise is included in the Environmental Policy, Regulation, and Law category.

Project Number and Category: 2002-3001 Environmental Science

Sponsoring Office: Office of Solid Waste and Emergency Response (OSWER)

Technology Innovation Office (TIO)

Office Mission/Responsibility: The mission of the TIO is to encourage the use of new treatment and

characterization technologies by government and industry to contaminated waste sites by removing regulatory/institutional

impediments and providing richer technology and market information to federal agencies, states, consulting engineering firms, responsible parties, technology developers, and the investment community.

Project Description: For this project, the program participant will prepare a technology

assessment on waste site assessment; or cleanup technologies; or a report on treatment methods available for a specific type of waste or site. Reports will include such information as a discussion of the waste problem; summary of technology theory and design; current status of research and use; summary of existing performance data, projected costs, advantages, and disadvantages of the technology or technologies. The technologies of interest to this office that could be studied include bioremediation, phytoremediation, chemical oxidation, or surfactant/cosolvent flusing of a specific contaminant or class of contaminants in soil or ground water; waste containment: remediation of sediments:

or ground water; waste containment; remediation of sediments; technologies for site assessment including in situ detection and monitoring of dense nonaqueous phase liquids (DIMAPLs); and techniques for optimizing operation and maintenance of cleanup facilities, such as pump-and-treat or soil vapor extraction systems. Another potential project is to test site remediation decision support software with actual site data. Students may find the report, and associated research, useful in fulfilling thesis requirements.

The goal of this project is to disseminate useful information on new

assessment and cleanup technologies to remediation professionals who

may be able to apply the technology to their contaminated site.

Desired Level of Education: Senior or 1st year graduate student

Project Location: Crystal Gateway 1, Arlington, VA

Preferred Project Period: June 2002-August 2002

(12 weeks)

Sponsor Information: John Kingscott

Project Goals:

Phone: 703 603 7189 Fax: 703 603 9135

Email: kingscott.john@epa.gov

Project Number and Category: 2002-3002 Environmental Science

Sponsoring Office: Division of Environmental Science and Assessment,

Monitoring and Assessment Branch

Office Mission/Responsibility: Air, water and biological monitoring and assessment.

Project Description:Assist with the data analysis and interpretation phase of a Regional Environmental Monitoring and Assessment Program (REMAP)

investigation to determine baseline biological, chemical and toxicological conditions in the Barnegat Bay Estuary, a national estuary of concern in southern New Jersey. The student would be involved with statistical analysis of data, interpretation of results and report preparation. The types of data include biological community measures, chemical data and land use information. The project would involve interaction with other scientists, resource managers and statisticians. The outcome would be

to provide a scientifically defensible, complete final report.

Project Goals:To provide a baseline of environmental conditions on a priority estuarine

system using scientifically defensible information and methods.

Desired Level of Education: 1st year graduate student

Project Location: EPA Region 2, Edison, New Jersey

Preferred Project Period: June 2002 - August 2002

(12 weeks)

Sponsor Information: Darvene Adams

Phone: 732 321 6700 Fax: 732 321 6616

E-mail: adams.darvene.@epa.gov

Project Number and Category: 2002-3003 Environmental Science

Sponsoring Office: Region 3 -Office of Environmental Programs

Office Mission/Responsibility: National Environmental Policy Act and the Clean Water Act

environmental reviews. Consultation with local, state and federal agencies concerning issues such as watershed monitoring; wetland functional assessment, mitigation, classification and delineation; linkages between ecological communities and the development of monitoring and assessment criteria [including Total Maximum Daily Loads (TMDL) for waters of the United States (including wetlands)].

Project Description: Build upon established wetland assessment methods which have been

developed for the determination of wetland function in targeted watersheds. Currently three levels of assessment are in use and based on: (1) remote sensing; (2) rapid field assessments; and (3) detailed on-site measurements. The student(s) will focus on at least one assessment level and will build on the progress made thus far in pilot watershed assessments (or in a watershed in which they have prior experience) and apply techniques to other regional watersheds. Applicants should submit proposals geared towards (1) developing design criteria for wetland/watershed monitoring projects; (2) tailoring the assessments to fit into existing agency programs; or (3) designing training methods for educating environmental professionals and citizen volunteers in the application of the methods. The student(s) will also provide support to an interagency wetland monitoring workgroup. Demonstrated skills in computers (Excel, Powerpoint), Geographical information System GIS (ArcView) and in ecological field methods would be advantageous. The student(s) should be willing to work under a

range of field, office and lab conditions.

Project Goals: Validate or improve upon existing wetland/watershed assessment

methods and recommend modifications and appropriate applications of the methods. The student(s) will gain experience in: field sampling methods, application of GIS, and the application of wetland or

watershed assessment methods.

Desired Level of Education: Senior.

1st year graduate student or 2nd year graduate student. Note: One or more students may be selected for this project.

Project Location: Either Philadelphia, PA (EPA regional office) or watershed of student's

experience.

Preferred Project Period: June 2002-August 2002

Sponsor Information: Charles A. Rhodes Jr.

Phone: 215 814 2743 Fax: 215 814 2783

E-mail: rhodes.charles@epa.gov

Project Number and Category: 2002-3004 Environmental Science

Sponsoring Office: Office of Environmental Programs, Environmental

Services Division

Office Mission/Responsibility:To protect the environment and make decisions using science.

Project Description: To conduct research regarding wetland functions and values, and to

study the state of the science of restoration and creation on both tidal

and non-tidal wetlands.

Project Goals: A report will need to be developed with results of the research.

Desired Level of Education: Freshman, Sophomore, Junior, Senior

1st year graduate student, 2nd year graduate student

Project Location: EPA Region 3, Philadelphia, PA

Preferred Project Period: May 2002-August 2002

Sponsor Information: Ralph Spagnolo

Phone: 215 814 2718 Fax: 215 814 2783

E-mail: spagnolo.ralph@epa.gov

Project Number and Category: 2002-3005 Environmental Science

Sponsoring Office: Environmental Services Division, Office of Ecological

Assessment and Management, Marine and Coastal Team

Office Mission/Responsibility: The Ocean and Coastal Team is responsible for the assessment of

coastal environmental programs from New Jersey south to

North Carolina.

Project Description: The student will take marine water quality data and sort, analyze and

statistically assess to determine changes, trends and correlations in parameters over time and space. The student will also collect marine water quality data to supplement the data. Data will include both chemical and biological parameters. A report will be prepared on the

information developed and background literature.

Project Goals: The first goal would be to further the scientific knowledge of coastal

oceanography in the Mid Atlantic coast, second would be to provide the students with hands on implementation of oceanographic principals and concepts used in EPA's environmental programs and third is to enhance

EPA's visibility with the student public.

Desired Level of Education: Junior, Senior

1st year graduate student, 2ndyear graduate student.

Project Location: Region 3, Philadelphia, PA

Preferred Project Period: June 2002-August 2002

(3 months)

Sponsor Information: William C. Muir

Phone: 215 814 2741 Fax: 215 814 2782

E-mail: muir.william@epa.gov

Project Number and Category: 2002-3006 Environmental Science

Sponsoring Office: Office of Research and Development (ORD)

National Exposure Research Laborary (NERL)

Human Exposure & Atmospheric Sciences Division (HEASD)

Office Mission/Responsibility: Development of measurement methods for characterization of ambient

and human exposure to pollutants.

Project Description: The student will assist in the development of new methods to measure

ambient exposure to atmospheric aerosols. Measurement methods will be developed to differentiate aerosol-size distributions and chemical composition. The student will gain experience utilizing state-of-the-art

aerosol monitoring equipment.

Project Goals: To test and evaluate new aerosol methodologies. To develop standard

operating protocols (SOPs) and quality assurance guidelines.

Desired Level of Education: Junior, Senior

1st year graduate student or above

Project Location: Research Triangle Park, NC

Preferred Project Period: August 2002 - August 2003

(12 months)

Sponsor Information: Russell W. Wiener

Phone: 919 541 1910 Fax: 919 541 1153

E-mail:wiener.russell@epa.gov

Project Number and Category: 2002-3007 Environmental Science

Sponsoring Office: Office of Research and Development (ORD), National Exposure Research Laboratory (NERL), Ecosystems Research Division (ERD)

Office Mission/Responsibility: The mission of the Office of Research and Development (ORD) is to

perform research and development to identify, understand, and solve current and future environmental problems; to provide responsive technical support to EPA's mission; to integrate the work of ORD's scientific partners; and to provide leadership in addressing emerging environmental issues and in advancing the science and technology of

risk assessment and risk management.

Project Description: In addition to being useful for chemical analysis, liquid chromatography

> (LC) both reversed-phase (RP) and normal bonded phase (NBP) can be used to probe the thermodynamics of the partitioning process. LC retention time measurements provide information about the combined nature of the mobile and stationary phases, while independent solution

measurements allow the effects of changes in a single-phase composition to be examined independently. In reversed-phase LC it is now clear that retention is governed by a partitioning process, rather than by adsorption. The thermodynamics of solute transfer from the mobile phase to the stationary phase are expressed experimentally in the retention factor k', where k'=KO, is the product of an equilibrium constant K for this solute transfer process multiplied by the ratio, 0. In normal bonded-phase LC the impact of the underlying silica (residual silanols) can control both retention times and selectivity by influencing the character of the bonded phase through hydrogen bonding. Research on retention time measurements with well characterized silica, both bare and with bonded groups of known density and volume, is needed in the development and testing of computational chemistry models that will

allow the calculation of HPLC retention times.

Project Goals: This project will provide a mechanism for a student interested in both

environmental science and computational chemistry to generate high quality data that the student subsequently use to define and test HPLC retention time calculations. The identification of unknown chemicals in environmental samples is an important issue to the scientific community and chromatographic retention time is an important tool in their

identification by spectral/chromatographic based methods.

Desired Level of Education: 2ndyear graduate student

Project Location: EPA Region 4, Athens, GA

Preferred Project Period: June 2002 - June 2003

(12 months)

Sponsor Information: J. Jackson Ellington

Phone: 7063558204 Fax: 7063558202

E-Mail: ellington.jackson@epa.gov

Project Number and Category: 2002-3008 Environmental Science

Sponsoring Office: Office of Research and Development (ORD), National Exposure

Research Laboratory (NERL), Ecosystems Research Division (ERD)

Office Mission/Responsibility: The mission of the Office of Research and Development (ORD) is to

perform research and development to identify, understand, and solve current and future environmental problems; to provide responsive technical support to EPA's mission; to integrate the work of ORD's scientific partners; and to provide leadership in addressing emerging environmental issues and in advancing the science and technology of

risk assessment and risk management.

Project Description: Investigate plants/plant systems under laboratory and field conditions

that have potential to attenuate organic contaminants in environmental compartments. Identify plants with enzyme systems that can degrade selected organic contaminants such as munitions, chlorinated solvents,

organophosphorus pesticides or any other recalcitrant class of

compounds. Select a plant system and investigate uptake, bioconcentration and tranformation processes. Determine breakdown products and

monitor their fate in the plant system.

Project Goals: Identify plants/plant processes that can degrade/bioaccumulate organic

contaminants. Enhance our understanding of how plants can be used to attenuate contaminants in environmental systems. Develop fundamental information on plant mediated clean up processes that can be used in the field. Develop models that can be used to describe these selected

plant mediated processes.

Desired Level of Education: 1st year graduate student

Project Location: Region 4, Athens, GA

Preferred Project Period: June 2002 - June 2003

(12 months)

Sponsor Information: N. Lee Wolfe

Phone: 7063558207 Fax: 7063558202 E-Mail: wolfe.lee@epa.gov **Project Number and Category:** 2002-3009 Environmental Science

Sponsoring Office: Office of Research and Development (ORD), National Exposure

Research Laboratory (NERL), Ecosystems Research Division (ERD)

Office Mission/Responsibility: The mission of the Office of Research and Development (ORD) is to

perform research and development to identify, understand, and solve current and future environmental problems; to provide responsive technical support to EPA's mission; to integrate the work of ORD's scientific partners; and to provide leadership in addressing emerging environmental issues and in advancing the science and technology of

risk assessment and risk management.

Project Description: The anthropogenic addition of excessive amounts of nitrogen to the

environment is linked with several environmental problems. These include buildup of trace gases in the atmosphere, which contributes to global warming and stratospheric ozone destruction, and runoff of nitrogen from agricultural systems which leads to degradation of surface and ground waters. Nitrous oxide (N_2 0) is radiatively active and contributes to the greenhouse effect. Nitric oxide (N_2 0) is chemically active and is important in atmospheric chemistry reactions involving ozone and hydroxyl radicals. Additionally, emission of N_2 0 oxide gases represents a significant loss of nitrogen from agroecosystems. Measurements of N_2 0 and/or N_2 0 flux or concentration in conjunction with measurement of N_2 0 cycling rates, measurements of N_2 0 species

concentrations, and measures of microbial indicators of important organisms in terrestrial and surface and ground water sites are needed. We have available analytical instrumentation for NO and N_2 0

measurements, and a stable isotope ratio mass spectrometer system available for N isotope measurements. This project would allow the fellow to develop skills relevant to study of the terrestrial N cycle.

Project Goals: The overall goals of this research area are to determine if: 1) rates of N

oxide gas cycling rate can be simply related to N cycling rate and 2) the influence of agricultural management practices on N gas flux and stream

N cycling and loading. The fellow would be expected to analyze environmental samples and produce a report describing those analyses.

Desired Level of Education: 1styear graduate student or above

Project Location: EPA Region 4, Athens, GA

Preferred Project Period: June 2002 - June 2003

(12 months)

Sponsor Information: Roger Burke

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Project Number and Category: 2002-3010 Environmental Science

Sponsoring Office: Office of Research and Development (ORD), National Exposure

Research Laboratory (NERL), Ecosystems Research Division (ERD),

Environmental Appeals Board (EAB)

Office Mission/Responsibility: The mission of the Office of Research and Development (ORD) is to

perform research and development to identify, understand, and solve current and future environmental problems; to provide responsive technical support to EPA's mission; to integrate the work of ORD's scientific partners; and to provide leadership in addressing emerging environmental issues and in advancing the science and technology of

risk assessment and risk management.

Project Description: Ecology has not traditionally been a field concerned with spatial

interactions in an explicit sense. In order to deal with environmental problems in an efficient and realistic way, spatial relationships must be

explored and understood.

One of the goals of the Regional Vulnerability program is to use the spatial data that is available to determine the status of our ecological resources, in a top down fashion. Satellite data and the use of geographic information systems are vital to this goal. Landscape ecology principles are to be applied to test the spatial patterns of the data

and ascertain the relationships of these (such as nested hierarchies) to

ecosystem function.

Project Goals: The current emphasis for the project are the regional ecosystems in the

U.S. Mid Atlantic. Because much of the data and necessary software exist to examine this data, there are many research opportunities for doing landscape ecology from estuarine fisheries to upland forests. Interested applicant will gain experience in landscape ecology, including the use of Geographical Information Systems (GIS) for data analysis and hypothesis testing, and related methods for performing investigations into the relationships of pattern to process (ecological function). The candidate will have a choice of the types of spatial modeling (including statistical analyses) and the application to their system, or taxonomic group of interest. Possible research topics include the investigation of patch sizes of various species, habitat preferences that relate to the size, location, and amount of edge in a given locale, and the way that an organism perceives its environment (relating to spatial scale and

environmental texture).

Desired Level of Education: Junior

Project Location: EPA Region 4, Athens GA

Preferred Project Period: June 2002 - June 2003

(12 months)

Sponsor Information: John M. Johnston

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Email: johnston.john@epa.gov

Project Number and Category: 2002-3011 Environmental Science

Sponsoring Office: Office of Research and Development (ORD), National Exposure

Research Laboratory (NERL), Ecosystems Research Division (ERD),

Environmental Appeals Board (EAB)

Office Mission/Responsibility: The mission of the Office of Research and Development (ORD) is to

perform research and development to identify, understand, and solve current and future environmental problems; to provide responsive technical support to EPA's mission; to integrate the work of ORD's scientific partners; and to provide leadership in addressing emerging environmental issues and in advancing the science and technology of

risk assessment and risk management.

Project Description: Ecological systems are complex in their functioning and are proving to

be challenging to depict conceptually and model in both space and time. New techniques for both conceptual and simulation exist that can be applied to natural systems for a more realistic approach. Object-oriented analysis techniques and programming languages focus on the entities of interest, whether individuals or communities of organisms, in a very real way. This differs from the procedural method to modeling in its approach as well as the utility of creating models that are modular and

reusable.

The multimedia integrated modeling system is an Office or Research and Development, EPA-wide effort to improve the state-of-the-art in scientific modeling and computing. There are numerous opportunities working with a range of projects, including aquatic and terrestrial systems that

apply to this area of research.

Project Goals:To develop new classes of ecological models for risk assessment that are

scalable and function over a range of spatial resolutions. Students will gain experience in these new methods and have a choice in their area of emphasis. The initial focus will be on simulating the response of aquatic ecosystems to stresses, such as sediments, habitat loss, toxic chemicals, and nutrient inputs. Within the aquatic system there is opportunity for aquatic plant, invertebrate, and vertebrate community research, as well as the chance to study the relationships of these to changes in land use, human development and agriculture, and nonpoint

source pollution.

Desired Level of Education: 1st year graduate student

Project Location: EPA Region 4, Athens, GA

Preferred Project Period: June 2002-June 2003

(12 months)

Sponsor Information: John M. Johnston

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E-mail:johnston.john@epa.gov

Project Number and Category: 2002-3012 Environmental Science

Sponsoring Office:Office of Research and Development (ORD), National Exposure
Research Laboratory (NERL), Ecosystems Research Division (ERD)

Office Mission/Responsibility: The mission of the Office of Research and Development (ORD) is to

perform research and development to identify, understand, and solve current and future environmental problems; to provide responsive technical support to EPA's mission; to integrate the work of ORD's scientific partners; and to provide leadership in addressing emerging environmental issues and in advancing the science and technology of

risk assessment and risk management.

Project Description: Solar UV-B radiation is believed to have important effects on coral

assemblages, but little is known about factors that affect the UV-B exposure of corals. This project is designed to provide improved understanding of factors that influence the penetration of solar UV-B radiation into marine waters overlying corals, including stratification of the water during and El Nino event, microbial and abiotic transformations that affect the UV-absorbing dissolved and particulate components of marine environments. Results of the studies will be used in conjunction with related biological studies of UV-induced DNA damage to help evaluate the role played by UV radiation in the decline of corals in

tropical marine environments.

Project Goals: (1) Participate in field trips to sites located in the Florida Keys to

measure solar spectral irradiance in the UV region and to collect water samples as a function of depth over corals; (2) help identify and quantify the biological sources of the dissolved and particulate constituents of the waters overlying the corals that are responsible for UV light attenuation; (3) use known techniques to extract, concentrate, identify, and quantitate the UV-attenuating substances in water over and near the coral reefs, including HPLC or capillary electrophoresis (CE) methods and adaptation of existing derivatization techniques to enhance sensitivity for detection by UV or fluorescence detectors; (4) conduct studies to determine the effects of microbial and photochemcial degradation on the UV absorption spectra of the dissolved organic matter; (5) determine rates of UV-

induced dissolved organic matter (DOM) transformations as a function

of water composition (pH, DOM concentration, iron content, salinity), wavelength and temperature.

Desired Level of Education: 1st year graduate student or above

Project Location: EPA Region 4, Athens, GA

Preferred Project Period: July 2002 - July 2003

(12 months)

Sponsor Information: Richard G. Zepp, Ph.D.

Phone: 7063558117 Fax: 7063558007

E-Mail: zepp.richard@epa.gov

Project Number and Category: 2002-3013 Environmental Science

Sponsoring Office:Office of Research and Development (ORD), National Exposure
Research Laboratory (NERL), Ecosystems Research Division (ERD)

Office Mission/Responsibility: The mission of the Office of Research and Development (ORD) is to

perform research and development to identify, understand, and solve current and future environmental problems; to provide responsive technical support to EPA's mission; to integrate the work of ORD's scientific partners; and to provide leadership in addressing emerging environmental issues and in advancing the science and technology of

risk assessment and risk management.

Project Description:Halogenated organic compounds hav become ubiquitous, environmental pollutants which can pose serious risks to ecosystems and human

health. Considerable effort has been directed towards understanding the reductive transformation of halogenated organic pollutants in anoxic environments such as lake sediments and landfill leachate, however, significant process elucidation is needed before reductive transformation can be effectively incorporated into environmental fate models. A limited understanding of transformation mechanisms is one barrier to being able to predict absolute reduction rates, and the manner in which these rates may vary from one environmental system to another. Uncertainty in the

identity of the primary reductans responsible for pollutant transformation is a second limitation.

Studies are being conducted at ERD to elucidate the rates and transformation mechanisms for a series of fifteen halogenated methanes in natural (e.g., iron-and sulfate reducing sediment) and model (e.g., iron sulfide, goethite, and iron oxides) systems. Additionally, work is being performed to identify the primary species involved in halomethane transformation and to determine how these species change as a function of environmental conditions.

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Project Number and Category:

(Continued)

2002-3013 Environmental Science

Project Goals:

The student will develop an understanding of the complexities and uncertainties associated with studying environmental systems and learn how model systems may be used to gain valuable insight into environmental processes. In light of the numerous uncertainties associated with environmental systems, the student will learn the importance of implementing good quality control and quality assurance practices in the research laboratory. Due to the diverse nature of this project, the student will apply a combination of analytical, organic, physical, and geochemical principles into data collection and interpretation. The student will also have an opportunity to see how experimental data are used to develop mathematical relationships, which in turn are used to develop predictive models, and may eventually be incorporated into regulatory actions.

The specific goals of this project are to measure reactivity patterns (i.e., relative rates of reactivity) for a series of halogenated ethanes in natural and model systems. Use principal component analysis to gain insight into the mechanisms of pollutant transformation and determine how these mechanisms change with changing redox conditions. Develop quantitative structure activity relationships (QSARs) between the rate of haloethane transformation and thermodynamic, molecular descriptors such as bond dissociation energy and A6° (standard free energy of one-electron transfer). Compare QSARs for the haloethanes with QSARs for the halomethanes.

Desired Level of Education: 1st year graduate student or above

Project Location: Region 4, Athens, GA

Preferred Project Period: June 2002 - June 2004

(24 months)

Sponsor Information: John F. Kenneke

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Project Number and Category: 2002-3014 Environmental Science

Sponsoring Office: Office of Research and Development (ORD), National Exposure

Research Laboratory (NERL), Ecosystems Research Division (ERD)

Office Mission/Responsibility: The mission of the Office of Research and Development (ORD) is to

perform research and development to identify, understand, and solve current and future environmental problems; to provide responsive technical support to EPA's mission; to integrate the work of ORD's scientific partners; and to provide leadership in addressing emerging environmental issues and in advancing the science and technology of

risk assessment and risk management.

Project Description: Hydrolysis is the dominant transformation pathway in the environment

for a wide range of chemicals including halogenated aliphatics and pesticides. A large number of studies exist pertaining to the hydrolysis of organic chemicals in both water and water/solvent mixtures and much is known about the reaction mechanisms and the nature of the transition states for hydrolysis reactions. In natural aquatic systems, however, the effect of mineral surfaces and natural organic matter (NOM) on hydrolysis is poorly understood. The lack of knowledge concerning hydrolysis rates at the mineral/water interface and the effect of NOM on hydrolysis is an obstacle to the accurate modeling of this transformation process. This project will require the student to conduct experiments to follow the hydrolytic tranformation of organic chemicals in mineral suspensions and in NOM-containing suspensions. These experiments will require the development of methodology that will involve the use of liquid chromatography, gas chromatography, ion

geochemistry.

Project Goals: The study will provide student with a research opportunity in

environmental sciences. The goal of this project is to gain insight in the hydrolytic transformation of organic chemicals in the presence of minerals. This work will provide the basis to understand abiotic hydrolytic transformation of organic pollutants in complex aquatic ecosystems that contain natural solid media such as sediments and

chromatography and mass spectrometry. The student will characterize the surface of the various minerals by standard methods used in

soils.

Desired Level of Education: 1 st year graduate student

Project Location: Region 4, Athens, GA

Preferred Project Period: June 2002-June 2003

(52 weeks)

Sponsor Information: Dalizza Colon

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Project Number and Category: 2002-3015 Environmental Science

Sponsoring Office: Office of Research and Development (ORD), National Exposure

Research Laboratory (NERL), Ecosystems Research Division (ERD)

Office Mission/Responsibility: The mission of the Office of Research and Development (ORD) is to

perform research and development to identify, understand, and solve current and future environmental problems; to provide responsive technical support to EPA's mission; to integrate the work of ORD's scientific partners; and to provide leadership in addressing emerging environmental issues and in advancing the science and technology of

risk assessment and risk management.

Project Description: Many pesticides found in the environment are chiral and, therefore, can

exist as sets of optically active isomers called enantiomers. These include the older persistent pesticides such as o,p'-DDT, cis- and transchlordane and helptachlor, as well as less persistent pesticides now in use such as organophosphates, imidazaolinones, and pyrethrins. Biological systems are generally enantiomerically selective, so that one isomer will be more bioavailable or toxic than the other. In addition, one of them will degrade faster than the other by microbial pathways. This project will consist of experiments to follow the degradation processes of chiral pesticides in various environmental matrices to determine the degree of enantioselectivity of the processes. Knowledge of the relative persistence of its enantiomers will improve assessment of exposure to

the pesticide.

Project Goals: The student will help develop analytical techniques based on chiral

capillary electrophoresis to separate the enantiomers of chiral pesticides. These techniques will be applied to real or simulated environmental samples spiked with or known to contain the chiral pesticide(s) to determine the extent of enantiomeric selectivity of the environmental system. This will provide the student with experience in adaptation and application of an analytical technique to a real environmental problem.

Desired Level of Education: 1st year graduate student

Project Location: Region 4, Athens, GA

Preferred Project Period: August 2002 - August 2003

(12 months)

Sponsor Information: Arthur W. Garrison, Ph.D.

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E-Mail: garrison.arthur@epa.gov

Project Number and Category: 2002-3016 Environmental Science

Sponsoring Office: Office of Research and Development (ORD), National Exposure

Research Laboratory (NERL), Ecosystems Research Division (ERD)

Office Mission/Responsibility: The mission of the Office of Research and Development (ORD) is to

perform research and development to identify, understand, and solve current and future environmental problems; to provide responsive technical support to EPA's mission; to integrate the work of ORD's scientific partners; and to provide leadership in addressing emerging environmental issues and in advancing the science and technology of

risk assessment and risk management.

Project Description: The fellow will investigate the development and application of an

analytical device for concentrating organic chemicals in water for analysis by Raman spectroscopy. The device will directly couple to a Raman fiber-optic probe and be amenable to remote sampling. The device will be based on semi-permeable membranes, which are capable of concentrating certain organics by orders of magnitude. The device will be developed by the fellow and evaluated for application for identification, quantification, and speciation of complex organics in

water.

Project Goals: Within the last few years, Raman spectroscopic instrumentation has

made great strides in sensitivity, portability, and applicability. It is now becoming feasible to apply this technology to environmental analysis-which can profit greatly from the unique advantages of the Raman technique (amenable to aqueous samples, no sample preparation

required, non-invasive sampling, etc.). However, most of the instrumental components of the modern Raman spectrometer have now 'topped-out' in their developmental paths, and Raman spectroscopy (in spite of its recent strides) is not quite sensitive enough for many 'real world' applications. Now is the time to investigate analyte concentration devices that can directly couple to Raman probes to push the effective sensitivity to levels required for environmental analysis. The long-range goal of this project is to produce such a device. The fellow would learn state-of-the-art analytical techniques that are enjoying tremendous growth in popularity for academic, industrial, and government research and development applications. If the development is successful, the general scientific community applying Raman spectroscopy to the analysis of aqueous samples would benefit from this development. (For example, it would be beneficial to this laboratory's efforts on

speciation of complex organics).

Desired Level of Education: 2ndyear graduate student

Project Location: Region 4, Athens, GA

Preferred Project Period: June 2002 - June 2003 (52 weeks)

Sponsor Information: Tim (olette

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Project Number and Category: 2002-3017 Environmental Science

Sponsoring Office: Office of Research and Development (ORD), National Exposure

Research Laboratory (NERL), Ecosystems Research Division (ERD)

Office Mission/Responsibility: The mission of the Office of Research and Development (ORD) is to

perform research and development to identify, understand, and solve current and future environmental problems; to provide responsive technical support to EPA's mission; to integrate the work of ORD's scientific partners; and to provide leadership in addressing emerging environmental issues and in advancing the science and technology of

risk assessment and risk management.

Project Description: The concentrations and forms of nitorgen in waters have a major effect,

often the dominant effect, on the health of ecocsystems. The fate of nitrogen compounds dissolved in ground and surface waters is tied closely to rates of transformation from one species to another. Many of these transformations are mediated microbially and the rates of reaction are related to the chemical environment of the waters. This project seeks to elucidate the relationship of forms of nitrogen, and its rates of

transformation, to other chemical parameters in the environment. The

work includes lab, field and modeling activities.

Project Goals: In this work, we hope to relate nitrogen form and rates of transformation

to variables such as organic carbon concentration, and perhaps form, concentrations of multivalent solutes, and the presence and form of minerals. Ideally, this work will culminate in kinetics equations that characterize rates of transformation as a function of measurable

chemical quantities.

Desired Level of Education: 1styear graduate student or above

Project Location: Region 4, Athens, GA

Preferred Project Period: June 2002 - June 2003

(12 months)

Sponsor Information: John Washington

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E-Mail: washington.john@epa.gov

Project Number and Category: 2002-3018 Environmental Science

Office Mission/Responsibility:

Sponsoring Office:Office of Research and Development (ORD), National Exposure
Research Laboratory (NERL), Ecosystems Research Division (ERD)

(LIND)

The mission of the Office of Research and Development (ORD) is to perform research and development to identify, understand, and solve current and future environmental problems; to provide responsive technical support to EPA's mission; to integrate the work of ORD's scientific partners; and to provide leadership in addressing emerging environmental issues and in advancing the science and technology of

risk assessment and risk management.

Project Description: Reductive transformation is the dominant reaction pathway for many

organic pollutants in anoxic environments. Although the understanding of the classes of organic chemicals that are subject to reduction in anoxic environments has been significantly advanced in recent years, it is not yet possible to predict the rates of reductive transformations quantitatively. The general goal of our project is to describe the reaction kinetics for the reductive transformation of organic chemicals in anoxic environments to develop useful predictive models. Towards this end, a dual approach is proposed involving (1) mechanistic studies in welldefined systems designed to address specific questions concerning the identification of naturally occurring reductants and electron transfer pathways and (2) laboratory measurements of the reaction kinetics for a series of nitroaromatics, aromatic azos and halogenated aliphatics in a large number of well-characterized anoxic sediments and groundwater aguifers. Measuring reduction kinetics for a series of probe molecules in a substantial number of well-characterized sediments and aquifer materials will provide the opportunity to delineate the properties of the reaction systems and probe chemicals that are useful for predicting reaction rates. The successful completion of the proposed research will significantly enhance our ability to predict half-lives for the reduction of

organic chemicals containing reducible functional groups.

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Project Number and Category:

(Continued)

2002-3018 Environmental Science

Project Goals:

The student will conduct experiments to measure reaction kinetics, identify reaction productss, and determine system variables that affect reductive transformation pathways. Experiments will be conducted in model systems designed to mimic natural reducting systems as well as in natural sediments and aquifer materials. Experiments will include the analysis of organic probe chemicals by gas and liquid chromatography and the quantification of redox indicators such as iron, manganese, sulfate, sulfide and hydrogen. Reaction kinetics will be determined for probe chemicals and kinetic expressions describing the reductive transformation of the probe chemicals will be developed.

Desired Level of Education: 1st year graduate student

Project Location: Region 4, Athens, GA

Preferred Project Period: August 2002 - August 2003

(12 months)

Sponsor Information: Eric J. Weber

Phone: 706 355 8224 Fax: 706 355 8202 E-Mail:weber.eric@epa.gov Project Number and Category: 2002-3019 Environmental Science

Sponsoring Office: Office of Research and Development (ORD), National Exposure

Research Laboratory (NERL), Ecosystems Research Division (ERD)

Office Mission/Responsibility: The mission of the Office of Research and Development (ORD) is to

perform research and development to identify, understand, and solve current and future environmental problems; to provide responsive technical support to EPA's mission; to integrate the work of ORD's scientific partners; and to provide leadership in addressing emerging environmental issues and in advancing the science and technology of

risk assessment and risk management.

Project Description: Investigate phytotransformation, phytoremediation and accumulation

and fate of chemicals by plants.

Project Goals: Student will conduct independent research on phytotransformation of

munitions, chlorinated solvents, perchlorate, and other chemicals to determine pathways and fate, or conduct extensive pilot investigations

to determine engineering performance in the lab or field.

Desired Level of Education: 1st year graduate student or above

Project Location: Region 4, Athens, GA

Preferred Project Period: June 2002 - June 2003

(12 months)

Sponsor Information: Steve McCutcheon

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mccutcheon.steven@epa.gov

Project Number and Category: 2002-3020 Environmental Science

Sponsoring Office: Office of Research and Development (ORD), National Exposure

Research Laboratory (NERL), Ecosystems Research Division (ERD),

Process and Modeling Branch (PMB)

Office Mission/Responsibility: The mission of the Office of Research and Development (ORD) is to

perform research and development to identify, understand, and solve current and future environmental problems; to provide responsive technical support to EPA's mission; to integrate the work of ORD's scientific partners; and to provide leadership in addressing emerging environmental issues and in advancing the science and technology of

risk assessment and risk management.

Project Description: Development of models and methods to calculate total maximum daily

loads and other methods to manage nonpoint source pollution.

Project Goals: Develop water quality, watershed, Riparian, and Hydrodynamic Models

for nonpoint and other sources of pollution, including preparing

databases and other information for testing models.

Desired Level of Education: 1st year graduate student or above

Project Location: EPA Region 4, Athens, GA

Preferred Project Period: June 2002 - June 2003

(12 months)

Sponsor Information: Steve McCutcheon

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Project Number and Category: 2002-3021 Environmental Science

Sponsoring Office: Office of Research and Development (ORD), National Exposure

Research Laboratory (MERL), Ecosystems Research Division (ERD),

Process and Modeling Branch (PMB)

Office Mission/Responsibility: The mission of the Office of Research and Development (ORD) is to

perform research and development to identify, understand, and solve current and future environmental problems; to provide responsive technical support to EPA's mission; to integrate the work of ORD's scientific partners; and to provide leadership in addressing emerging environmental issues and in advancing the science and technology of

risk assessment and risk management.

Project Description: Development of models and methods to calculate total maximum daily

loads and other methods to manage nonpoint source pollution.

Project Goals: Develop water quality, watershed, Riparian, and Hydrodynamic Models

for nonpoint and other sources of pollution, including preparing

databases and other information for testing models.

Desired Level of Education: 1st year graduate student or above

Project Location: EPA Region 4, Athens, GA

Preferred Project Period: June 2002-June 2003

(12 months)

Sponsor Information: Earl Hayter, Ph.D.

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Project Number and Category: 2002-3022 Environmental Science

Sponsoring Office: Office of Research and Development (ORD)

National Health and Environmental Effects

Research Laboratory (NHEERL)

Atlantic Ecology Division

Office Mission/Responsibility: Reducing scientific uncertainty regarding the environmental and human

health effects of environmental agents

Project Description: The student will participate in assessing the potential role of biomarkers

in planning for a large longitudinal cohort study of environmental factors related to child development. Primary exposures of interest in ongoing pilot studies are pesticides and drinking water disinfection byproducts. Potential outcomes include: reproductive function (male and female), fertility, pregnancy and birth outcomes, and child development including immune function, respiration and neurobehavioral measures. The student will have the opportunity to explore the use of biomarkers in epidemiologic studies and evaluate various strategies for establishing and maintaining a large longitudinal cohort. This includes the potential trade off between subject retention and the collection of biologic specimens. This project will provide the student with valuable experience in the design, conduct and analysis of environmental

epidemiologic studies and community-based research.

Project Goals:To produce a report on the use of biomarkers in the context of a large

longitudinal cohort study of parents and children.

Desired Level of Education: Junior or above

Project Location: EPA, Chapel Hill, NC

Preferred Project Period: June 2002 - December 2002

(7 months)

Sponsor Information: Pauline Mendola, Ph.D.

Phone: 919 966 6953 Fax: 919 966 7584

E-mail: mendola.pauline@epa.gov

Project Number and Category: 2002-3023 Environmental Science

Sponsoring Office: Office of Research and Development (ORD)

National Health and Environmental Effects

Research Laboratory (NHEERL)

Atlantic Ecology Division

Office Mission/Responsibility: The mission of the Atlantic Ecology Division at Narragansett is to

perform research to better understand and quantify the ecological effects of anthropogenic stressors on the coastal waters and watersheds of the

Atlantic seaboard.

Project Description: The purpose of this project is to investigate emerging diseases in the

marine environment in coastal waters of the northeastern United States. The focus of research will be: 1) identify marine disease and mortality events that have occurred at all levels of the marine ecosystem over the last 30 years in the NE region; 2) characterize spatial and temporal trends of these events; 3) investigate correlations between disease

events and anthropogenic and/or climate factors.

Project Goals: This project will contribute to our understanding of the processes that

control emergence or resurgence of diseases in the marine environment,

especially those related to anthropogenic and climate factors.

Desired Level of Education: 1st year graduate student or above

Project Location: Atlantic Ecology Division, Narragansett, RI

Preferred Project Period: June 2001 - June 2003

Sponsor Information: Romona Haebler

Phone: 401 782 3095 Fax: 401 782 3030

E-Mail: haebler. romona@epa.gov

Project Number and Category: 2002-3024 Environmental Science

Sponsoring Office: Office of Research and Development (ORD)

National Health and Environmental Effects

Research Laboratory (NHEERL)

Atlantic Ecology Division

Office Mission/Responsibility: The mission of the Atlantic Ecology Division at Narragansett is to

perform research to better understand and quantify the ecological effects of anthropogenic stressors on the coastal waters and watersheds of the

Atlantic seaboard.

Project Description: The project relates nutrient inputs to water quality in an estuary. The

time scale of interest is one year to decades. The project includes reviewing and assembling data from the literature and existing databases, analyzing and interpreting seasonal contributions to an annual nutrient budget, and summarizing and interpreting long-term

trends.

After familiarization with the project, the student will, with guidance from staff, choose an area of research within the scope of the project and participate in study design, data analysis, and reporting of results

and conclusions.

Project Goals: The student will learn to complete assembly, analysis, interpretation,

and reporting of data relevant to the project area of research.

Desired Level of Education: Junior, Senior or above

Project Location: EPA Atlantic Ecology Division, Narragansett, RI

Preferred Project Period: June 1,2002-August 1,2002

(3 months)

Sponsor Information: Edward Dettmann

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E-Mail: dettmann.edward@epa.gov

Project Number and Category: 2001-3025 Environmental Science

Sponsoring Office: Office of Research and Development (ORD)

National Health and Environmental Effects

Research Laboratory (NHEERL)

Atlantic Ecology Division

Office Mission/Responsibility: The mission of the Atlantic Ecology Division at Narragansett is to

> perform research to better understand and quantify the ecological effects of anthropogenic stressors on the coastal waters and watersheds of the

Atlantic seaboard.

Project Description: We are developing methods to assess estuarine health using juvenile fish

and their habitats. Areas of research include:

Using fish growth rates to assess habitat quality

 Collating and analyzing historical fish survey data to look for relationships between fish communities and human impacts.

Conducting field work to measure fish habitat parameters, such as

sediment type, vegetation, and water quality.

Correlating fish collections with fish habitat measurements.

Examples of projects include developing and index of estuarine health using historic fish survey data, linking juvenile fish and their habitats using fish and habitat data, developing unique gear to sample fish in under-sampled habitats such as marshes and seagrass, comparing fish communities in different habitats such as marshes, marsh creeks, intertidal and subtidal areas, and comparing growth rates of fish collected in different habitats. Most of the work is conducted outdoors from boats or in shoreline locations. Some sample analysis is done in the laboratory. After becoming familiar with the project, the student will choose an area of research within the topic and be responsible for designing, implementing, and summarizing the projects.

Project Goals: Our objective is to develop methods of using fish and fish communities

to understand and quantify varying degrees of human impacts in estuaries and coastal areas. The methods developed are also expected to allow some ability to predict the effects of human activities on fish

communities and coastal ecosystems.

Desired Level of Education: Junior or above

Project Location: EPA Narragansett Lab, Narragansett, RI

Preferred Project Period: June 1, 2002 - August 31, 2002

(3 months)

Sponsor Information: Lesa Meng

> Phone: 401 782 9618 Fax: 401 782 3030 E-Mail: meng.lesa@epa.gov

Project Number and Category: 2002-3026 Environmental Science

Sponsoring Office: Office of Research and Development (ORD)

National Health and Environmental Effects

Research Laboratory (NHEERL)

Atlantic Ecology Division

Office Mission/Responsibility: The mission of the Atlantic Ecology Division at Narragansett is to

perform research to better understand and quantify the ecological effects of anthropogenic stressors on the coastal waters and watersheds of the

Atlantic seaboard.

Project Description: The project will evaluate how the alteration of critical wetlands affects

the maintenance of healthy plant and animal populations. Habitat alterations have been identified as major causes of endangerment for species within the United States. Wetlands are rapidly being affected by land-use activities or through direct loss, encroachment, or degradation. Consequently, alteration of wetlands can degrade diversity, food-web structure, ecosystem, function, and populations of valued fish, shellfish, and wildlife species via complex effect pathways. Metrics of habitat alteration will be correlated with indicators of biodiversity and life

support functions for valued wetland populations.

Project Goals:Measurement of a suite of indicators of wetland biodiversity and life

support functions to be correlated with metrics of habitat alteration.

Desired Level of Education: Sophomore, Junior or Senior

Project Location: Narganasett, Narganasett, RI

Preferred Project Period: June 1, 2002 - August 31, 2002

(3 months)

Sponsor Information: Cathleen Wigand, Ph.D.

Phone: 403 782 3090 Fax: 403 782 3030

E-mail: wigand.cathleen@epamail.epa.gov

Project Number and Category: 2002-3027 Environmental Science

Sponsoring Office: Office of Research and Development (ORD)

National Health and Environmental Effects

Research Laboratory (NHEERL)

Atlantic Ecology Division

Office Mission/Responsibility: The mission of the Atlantic Ecology Division at Narragansett is to

> perform research to understand better and quantify the ecological effects of anthropogenic stressors on the coastal waters and watersheds of the

Atlantic seaboard.

Project Description: This project has two components: 1) conduct studies investigating the

relationship between bioaccumulation of persistent bioaccumulatable toxicants (PBTs) (e.g. RGBs, Hg and PAHs) and adverse ecological effects; and 2) perform research developing tools for diagnosing, characterizing and identifying active stressors present in environmental samples (i.e., waters, sediments). The student will contribute to the projects described above by providing input on experimental design, conducting an independent part of the project(s), and reporting the results of their involvement. For the student, this involvement will allow them to experience all aspects of the scientific process from conception of their specific scientific question to summarization of what their

research means. One or more students may be selected for this project.

Project Goals: For the first component, the objective is to better understand the

> ecological impacts of bioaccumulation which currently are not well known by the scientific community. In the second component, the goal is to generate methods which will allow environmental managers to determine what stressors are adversely affecting their system(s) and

work toward a cost-effective resolution plan.

Desired Level of Education: 1st year graduate student or above

Project Location: Atlantic Ecology Division, Narragansett, RI

Preferred Project Period: June 2002-June 2003

(12 months)

Sponsor Information: Robert M. Burgess

> Phone: 401 782 3106 Fax: 401 782 3030

E-mail: burgess.robert@epa.gov

Project Number and Category: 2002-3028 Environmental Science

Sponsoring Office: Office of Research and Development (ORD)

National Health and Environmental Effects

Research Laboratory (NHEERL)

Atlantic Ecology Division

Office Mission/Responsibility: The mission of the Atlantic Ecology Division at Narragansett is to

perform research to understand better and quantify the ecological effects of anthropogenic stressors on the coastal waters and watersheds of the

Atlantic seaboard.

Project Description: The objective of this research is to develop tools for diagnosing,

characterizing and identifying active stressors present in environmental samples (i.e., waters, sediments). Currently, the methods are fairly well developed, however projects that verify the accuracy of these methods in the field need to be performed. Projects that complement our program in these areas are welcome. The student will contribute to the projects described above by providing input on experimental design, conducting an independent part of the project(s), and reporting the results of their involvement. For the student, this involvement will allow them to experience all aspects of the scientific process from conception of their specific scientific question to summarization of what their research means. One or more students may be selected for this project.

Project Goals: The project goal is to verify methods that allow environmental

managers to determine what stressors are adversely affecting their

system.

Desired Level of Education: Junior, Senior,

1st year graduate student or above

Project Location: EPA Atlantic Ecology Division, Narragansett, RI

Preferred Project Period: June 2002-June 2003

(12 months)

Sponsor Information: Kay Ho

Phone: 401 7823196 Fax: 401 782 3030 E-mail: ho.kay@epa.gov **Project Number and Category:** 2002-3029 Environmental Science

Sponsoring Office: Office of Research and Development (ORD)

National Health and Environmental Effects

Research Laboratory (NHEERL)

Atlantic Ecology Division

Office Mission/Responsibility: The mission of the Atlantic Ecology Division at IMarragansett is to

perform research to understand better and quantify the ecological effects of anthropogenic stressors on the coastal waters and watersheds of the

Atlantic seaboard.

Project Description: The Atlantic Ecology Division (IMarragansett, RI) of EPA/ORD/NHEERL

has an ongoing research program to develop methods to assess the effects of anthropogenic stressors on wildlife populations. This program is a multi-disciplinary effort that is founded in many sub-disciplines of ecology, ranging from genetic/evolutionary, organismal (e.g., disease/parasite interactions), populations and spatial ecology, and utilizes both empirical and modeling approaches. For example, current projects include examinations of populations offish with limited home ranges that have adapted genetically to an intensely chemically-polluted environment, and populations of birds with large georgraphic ranges that experience multiple temporally - and spatially-diverse stressors. Student projects are encouraged that complement our ongoing research efforts and are directed towards improving our understanding of factors

that regulate wildlife populations.

Project Goals: This project will contribute to the understanding of facts that regulate

wildlife populations and how populations respond to stressors of

varying types and scales.

Desired Level of Education: Junior, Senior, 1st Year Graduate Student or above

Project Location: Atlantic Ecology Division, Narragansett, RI

Preferred Project Period: June 1,2002-June 1,2003

(3 months)

Sponsor Information: Diane Macci

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E-Mail: nacci.diane@epa.gov

Project Number and Category: 2002-3030 Environmental Science

Sponsoring Office: Office of Research and Development (ORD)

National Risk Management Research Laboratory (NRMRL)

Water Supply Water Research Division (WSWRD)

Office Mission/Responsibility: Small drinking water and wastewater system treatment technology

evaluations

Project Description: 1.) Operate pilot scale treatment technology.

2.) Collect influent and effluent water quality samples.

3.) Perform water quality analyses.

Project Goals: Evaluate the performance of various treatment technologies.

Desired Level of Education: Must have completed 1st year graduate courses

Project Location: Cincinnati, OH

Preferred Project Period: Summer 2002

(3 months)

Sponsor Information: Roy Haught

Phone: 513 569 7067 Fax: 513 569 7052

E-mail: haught.roy@epa.gov

Project Number and Category: 2002-3031 Environmental Science

Sponsoring Office: Office of Research and Development (ORD)

National Risk Management Research Laboratory (NRMRL)

Water Supply Water Research Division Water Quality Management Branch

Office Mission/Responsibility: Source Water Protection

Project Description: 1.) Collect stream water quality samples.

2.) Perform water quality analyses.

3.) Develop Geographical information System GIS Data Base.

Project Goals: Relate water quality and land use data.

Desired Level of Education: 1st year graduate student

Project Location: EPA Cincinnati, OH

Preferred Project Period: June 2002 - September 2002

(3 months)

Sponsor Information: Trent Schade

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E-mail: schade.trent@epa.gov

Project Number and Category: 2002-3032 Environmental Science

Sponsoring Office: Office of Research and Development (ORD)

National Risk Management Research Laboratory (NRMRL)

Sustainable Technology Division

Clean Processes Branch

Office Mission/Responsibility: Multimedia research and techniques for integrated

pollution management.

Project Description: Will view and classify images using ERDS Image software

and complimenting equipment in the Geographical information

System (CIS) laboratory.

Project Goals:1.) Implement methods based on ERDS Image software that can be

used to develop land use classifications from digitized color IR photos.

2.) Learn techniques to verify and validate the methodologies on IR

photos of a watershed.

Desired Level of Education: 1st year graduate student

Project Location: Cincinnati, OH

Preferred Project Period: June 2002 - September 2002

Sponsor Information: Dr. Gilbert Rochon

Phone: 513 569 7409 Fax: 513 569 2511

E-mail: rochon.gilbert@epa.gov

Project Number and Category: 2002-3033 Environmental Science

Sponsoring Office: Office of Research and Development (ORD)

Office Mission/Responsibility: Perform research and development to identify, understand, and

solve current and future environmental problems.

Project Description:One of the missions of the EPA's National Exposure Research Laboratory

at Las Vegas is to perform research on the characterization, evaluation, measurement, and monitoring of the environment through a multi-disciplinary, multi-media approach that emphasizes field applications. Among field analytical methods, one of the innovative technologies that shows promise for certain environmental applications is termed

biosensors.

A biosensor is an analytical device composed of a biological recognition element (e.g. enzyme, receptor, or antibody) attached to a signal transducer (e.g. electrochemical, optical, or piezoelectric) which together relate the concentration of a target analyte to a measurable electrical

signal.

Biosensor projects currently underway in our laboratory include: Enzyme-Based Biosensor for Detection of Phenols, Optical Detection of DNA Damage, Enzyme-Based Assays for Detection of Insecticides, and Antibody-Based Biosensors for Detection of Pesticides.

This position involves the fabrication and use of biosensors for detection of environmental pollutants. This position requires a time commitment of 1/2 time during the school year and full time during the summer. Skills required include a firm grasp of undergraduate chemistry with laboratory experience.

Project Goals: The goal of this project will involve the student's development of a body

of research which will further their career goals and may provide the

experimental basis for a Masters Thesis.

Desired Level of Education: Senior, 1st year graduate student or above

Project Location: EPA, Las Vegas, NV

Preferred Project Period: September 2002 - September 2004

(24 months, part time)

Sponsor Information: Dr. Kim R. Rogers

Phone: 702 798 2299 Fax: 702 798 2107

E-mail: rogers.kim@epamail.epa.gov

Project Number and Category: 2002-3034 Environmental Science

Sponsoring Office: Office of Research and Development (ORD)
National Exposure Research Laboratory (NERL)

Environmental Sciences Division (BSD)
Environmental Chemistry Branch (ECB)

Office Mission/Responsibility: As stated in the ORD Strategic Plan, the mission of ORD is four-fold: to

perform research and development to address current and future environmental problems; to provide responsive technical support to EPA's mission; to integrate the work of ORD's research partners; and to provide leadership in addressing emerging environmental issues and advancing the science and technology of risk assessment and

management.

Project Description:To develop a quantitative health and environmental risk assessment of

pharmaceutical and personal care products (PPCPs) in the environment, information on exposures is essential. A full exposure assessment has complex requirements that require preliminary information to direct further research in this area. Such research begins with determining the levels of suspect PPCPs in the environment. The PPCPs can be broadly classified into two categories: those that can be analyzed by conventional means (e.g., gas chromatography for organics and various elemental analyzers for inorganics), and those that are non-volatile/non-extractable/thermally labile (unconventional). Although many of the PPCPs can be measured in dilute standards, few, if any, ERA methods exist for their measurement in biota or complex environmental media. Current methodologies also may not be sensitive enough to measure low levels of the PPCPs in ambient environmental media. New analytical methodologies will be needed to deal with the monitoring and

measurement of the PPCPs in ambient multimedia environment.

A thorough method development/method validation approach will generally be employed. This will include literature survey, method selection, development, optimization, and validation. Criteria for optimization and validation will include method detection limit (as estimated by instrument signal-to-noise ratio and, alternatively, by precision of the overall method at low analyte concentration), precision, accuracy, ruggedness, cost, speed of analysis, common availability of instrumentation, and potential for field use. State-of-the-art technologies will be applied to various environmental problems. These will be applied to various environmental problems. These will include, but are not

(continued on next page)

Project Number and Category:

(Continued)

2002-3034 Environmental Science

Project Description: limited to, capillary electrophoresis (CE), high temperature gas

chromatography (HTGC), thin-layer chromatography (TLC), accelerated solvent extraction (ASE), supercritical fluid extraction (SFE), quadrupole mass spectrometry (MS), ion-trap mass spectrometry (ITMS), field portable gas chromatography/mass spectrometry (GC/MS), highresolution mass spectrometry (HRMS), eletrosprary-ion trap mass spectrometry (ES-ITMS), electrospray-triple quadrupole mass spectrometry (ES-MS), inductively coupled plasma mass spectrometry

(ICP-MS), micro-liquid chromatography ICP-MS, gas chromatography-

atomic emission detection (GC-AED), and atomic adsorption

spectrometry (AAS).

A time commitment of 1/2 time during the school year and full time during the summer will be necessary to meet the project goals. Skills required include a firm grasp of undergraduate chemistry with laboratory

experience.

Project Goals: A novel publishable method will be developed. The student's body of

research will further their career goals aand may provide the

experimental basis for a Masters Theses.

Senior, 1st year graduate student or above **Desired Level of Education:**

Project Location: Las Vegas, NV

Preferred Project Period: September 2002 - September 2004

(24 months)

Sponsor Information: Tammy L. Jones-Lepp

> Phone: 702 798 2144 Fax: 702 798 2142

E-mail: jones-lepp.tammy@epa.gov

Project Number and Category: 2002-3035 Environmental Science

Sponsoring Office: Office of Research and Development (ORD)

National Exposure Research Laboratory (IMERL)

Environmental Sciences Division (ESD) Environmental Chemistry Branch (ECB)

Office Mission/Responsibility: Develop leading edge tools for measuring real exposure of

ecosystems to stressors.

Project Description: Student serves on a multi-disciplinary team that develops and applies

analytical chemical methods to better understand the transport and fate of pollutants. Emphasis is on organoarsenic compounds and organic

pesticides used in agriculture.

Project Goals: Peer reviewed publications will be authored by the team on the

distribution and fate of the target pollutants in various ecosystems.

Desired Level of Education: Junior, Senior, 1st year graduate student or above

Project Location: Las Vegas, NV

Preferred Project Period: May 2002 - May 2003

(12 months)

Sponsor Information: Georges-Marie Momplaisir

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Project Number and Category: 2002-3036 Environmental Science

Project Description:

Project Goals:

Sponsoring Office: Central Regional Laboratory, Resource Management

Office Mission/Responsibility:

Analyze environmental samples for regional programs, stakeholders

and the general public.

The poor health of native fish species in certain impacted waters raises concern for the integrity of the marine environment in the region. It can be expected from their high trophic position and proximity to land-based sources of alkylphenols, alkylphenol ethoxylates, semivolatile organics, pesticides, pharmaceuticals, PCB's, metals and nutrients that they may tend to bioaccumulate in substantial concentrations in exposed river and lake fish. Concentrations in fish due to species, gender and tissue type may be important characteristics contributing to the bioaccumulation patterns observed in affected species and may affect their growth, malaise, sex characteristics, abnormal hormone levels and decreased or absent reproductive capabilities. A broad study accounting for the concentrations of chemicals in the water column and in fish tissues during different times of the year may be able to pinpoint where chemicals bioaccumulate. Analyzing observable biomarkers such as, changes in fish or organ characteristics and concentrations of proteins or hormones may indicate which organs are affected.

This project requires a junior or higher level college student majoring in chemistry or related fields who will work under the supervision of EPA personnel to develop procedures to:

- 1. Extract alkylphenols and alkylphenol ethoxylates from whole fish and fish tissues and prepare them to be analyzed by GC/MS to analyze for their presence and concentration.
- Develop solid phase extraction techniques in order to extract the compounds being studied in the fish tissue from water samples collected at the fish collection site. The extract must be suitable for GC/MS analysis.
- 3. Develop suitable methods for other chemicals of interest following the above criteria in 1 and 2 as they become known.

The student will learn:

- 1. A Scientific Approach to Problem Solving
- Data Analysis
- Learn to Operate and Maintain State of the Art Scientific Equipment
- 4. Communication of Findings to Peers

Project Number and Category: 2002-3036 Environmental Science

(Continued)

Desired Level of Education: Junior, Senior or 1st year graduate student

Project Location: Region 5, Chicago, IL

Project Period: May 2002-September 2002

(4 months)

Sponsor Name: Dr. Larry Zintek

Phone: 312 886 2925 Fax: 312 886 2591

Email: zintek.lawrence@epa.gov

Project Number and Category:	2002-3037 Environmental Science
Sponsoring Office:	Great Lakes National Program Office (GLNPO)
Office Mission/Responsibility:	To protect, maintain, and restore the chemical, biological, and physical integrity of the Great Lakes.
Project Description:	The project will give the intern the opportunity to become familiar with a wide range of sediment assessment and analysis techniques, methods for making decisions based on the results of sediment quality data, relational databases for formatting and storing information, and GIS visualization tools for viewing sediment data. The intern will also gain experience in development of a sediment assessment sampling and analysis plan, requirements of a quality assurance management plan, and evaluation of the quality and acceptability of data collected by a variety of sources.
	Specifically, the intern will:
	 Compile historical data on dioxin/furan contamination in the Saginaw River Area of concern into a relational database.
	2. Perform QA/QC analysis of sediment data.
	3. Display the results of the study on GIS maps.
	 Compare the data to existing Sediment Quality Guidelines (SQGs).
	5. Summarize the results of these studies in a final report.
Project Description:	Depending on the timing and length of the internship, the intern may also have an opportunity to accompany U.S. EPA personnel onboard the Research Vessel Mudpuppy during a sediment sampling survey and/or attend a sediment assessment workshop.
Project Goals:	Determine temporal and spatial trends in dioxin/furan contamination of sediments in the Saginaw River Area of concern into a relational database (AOC). This project will provide the interested environmental community with a screening level summary of sediment quality conditions within the AOC data.
Desired Level of Education:	Junior
Project Location:	Region 5, Chicago, IL
Project Period:	May 2002-September 2002 (4 months)
Sponsor Name:	Scott Cieniawski Phone: 312 353 9184 Fax: 312 353 2018 Email: cieniawksi.scott@epa.gov

Sponsoring Office:	Central Regional Laboratory, Resource Management
Office Mission/Responsibility:	Analyze environmental samples for the Region programs, stakeholders and general public.
Project Description:	Polychlorinated biphenyls (PCBs) and polybrominated biphenyl ethers (PBBEs) are suspected carcinogens and have been shown to be persistent within the environment. Their lipid solubility leads to the accumulation of these compounds in animal fatty tissues. For these reasons, PCBs have been banned from being manufactured and can only be used in sealed containers. PBBEs have similar properties and have been found in human tissue and fish tissue in the Seattle, Pacific Northwest region of the United States.
	Recent studies have shown that atmospheric deposition is now a major source for PCBs entering the Great Lakes. Atmospheric distribution of the PCBs is congener specific with lighter less chlorinated congeners being more available for atmospheric transport. Atmospheric sources of PCBs entering the Great Lakes are not well understood, and knowledge of the congener composition would aid in understanding the PCBs fate. PBBEs are similar in structure to PCBs, but may be increasing in the environment because of their use as flame retardants. Their environmental fate is similar to that of the PCBs.
	The qualified applicant will develop an analytical method to identify PCB congeners and PBBEs in water using solid phase extraction with subsequent large volume infection GC/MS detection.
Project Goals:	The goal of the project is to develop a solid phase extraction, GC/MS method to positively identify PCB and PBBE congeners in water leading to a better understanding of the fate of these compounds in our environment.
Desired Level of Education:	1st year graduate student
Project Location:	Region 5, Chicago, IL
Project Period:	May 2002-September 2002 (4 months)
Sponsor Name:	Dr. Wayne J. Whipple Phone: 312 353 9063 Fax: 312 886 2591 Email: whipple.wayne@epa.gov

2002-3038 Environmental Science

Project Number and Category:



Public Relations and Communications

Topics in this category include the review and analysis of public response to ERA policies and regulations, as well as general public opinion of environmental issues. Also included in this category is the development of communication tools ranging from pamphlets and informational materials to slide and film presentations in order to inform and educate the public on environmental protection issues.

Project Number and Category: 2002-4001 Public Relations and Communications

Sponsoring Office: Office of Water (OW)

Office of Wastewater Management (OWM)

Water Permits Division (WPD)

Office Mission/Responsibility: Oversight of National Storm Water Permitting Program, including

regulation development and program implementation.

Project Description: In March 2003, more than 5,000 smaller communities across the

country will be required to apply for permit coverage for the control and management of storm water discharges from municipal separate storm sewer systems. Each of these 5,000+ communities will be required to develop and implement a public education and outreach program about the impact of storm water discharges on local waterbodies and the steps that can be taken to reduce storm water pollution. This project is to research existing public education efforts and prepare a variety of materials and strategies that these small communities can use in developing their own outreach efforts.

Project Goals: A compendium will need to be developed highlighting existing public

education and outreach activities related to storm water impacts and

control measures.

Desired Level of Education: Sophomore or Junior

Project Location: EPA Headquarters, Washington, DC

Preferred Project Period: June 2002 - December 2002

(6 months)

Sponsor Information: Jack Faulk

Phone: 202 564 0768 Fax: 202 564 6431 E-Mail: faulk.jack@epa.gov **Project Number and Category:** 2002-4002 Public Relations and Communications

Sponsoring Office:Office of Solid Waste and Emergency Response (OSWER), Office of Emergency and Remedial Response (OERR, Superfund), Community

Involvement and Outreach Center (CIOC)

Office Mission/Responsibility: The mission of the Superfund program is to reduce the risk to people

and the environment by cleaning up the nation's worst hazardous waste problems. The mission of the Community Involvement program is to advocate and strengthen early and meaningful community participation

during Superfund cleanups.

Project Description: The Community Involvement program seeks to build capacity in

communities so that citizens may effectively participate in the Superfund process. This project with the Community Involvement and Outreach Center asks the student to become familiar with the

Superfund process and how public participation processes are

implemented during cleanups.

Building capacity in communities may focus on providing technical assistance; and providing communities the opportunity to form advisory groups to discuss site activities and resolve issues. In addition, the Community Involvement and Outreach Center works to establish dialogues with the public on critical issues facing communities near Superfund sites. These issues could involve relocating families in order to safely clean up the site, or redeveloping sites for productive uses.

The specific project will depend on the emerging issues at the time of the application and selection. Students applying for this fellowship must have good writing skills and be able to perform basic research, critical analysis, and synthesis of information from multiple sources. In addition, the students should have knowledge of community involvement and conflict resolution.

Project Goals:To help the student learn the critical issues facing a government agency

as it seeks to involve the public in decision making. The student will have the opportunity to learn and to analyze emerging issues or topics, and to work with the staff on developing strategies for managing the

issues/topics.

Desired Level of Education: Senior, 1^{s1} year or 2nd year graduate student

Project Location: Headquarters, Arlington, VA and Washington, DC

Preferred Project Period: June 2002 - August 2002

(3 months)

Sponsor Information: Suzannne Wells

Phone: 703 603 8863 Fax: 703 603 9100

E-mail: wells.suzanne@epamail.epa.gov

Project Number and Category: 2002-4003 Public Relations and Communications

Sponsoring Office: Communications Division

Office Mission/Responsibility: Responsible for media, community, inter-governmental and

public relations.

Project Description: Update and expand "Frequently Asked Questions (FAQs)" on Region 2

website.

Project Goals:To provide comprehensive FAQ database for Water Compliance Branch

and for use by people responding to phone questions.

Desired Level of Education: Junior or above

Project Location: Region 2 - New York City, NY

Preferred Project Period: June 2002 - September 2002

(3 months)

Sponsor Information: Richard Stapleton

Phone: 212 637 3662 Fax: 212 637 5046

E-Mail: stapleton.richard@epa.gov



Computer Programming and Development

Topics in this category can include, for example, the development of computer software, the development of, or gathering information from, databases, and programming functions required in laboratory work, etc.

Project Number and Category: 2002-5001 Computer Programming and Development

Sponsoring Office: Office of Prevention Pesticides and Toxic Substances (OPPTS)

Office of Pollution Prevention and Toxics (OPPT)

Pollution Prevention Division (PPD)

Office Mission/Responsibility: To integrate a multimedia pollution prevention ethic both within and

outside the EPA through support of pollution prevention efforts at the federal, state, and local levels, and to promote prevention of pollution over EPA's traditional pollution control and cleanup actions, essentially to eliminate or reduce the creation of pollution in the first place.

Project Description: Assist the Pollution Prevention Division staff by developing and

enhancing the various project's websites. Since staff are at various learning stages with web access, there is a wide variety of needs. All development must be completed using agency standards. Currently, the Pollution Prevention Division manages 3 major sites (and several smaller ones): Pollution Prevention (P2) site, Environmentally Preferable Purchasing (EPP) site, and Persistent Bioaccumulative Toxic Chemicals

(PBT) site.

Project Goals: The purpose of this project is to provide an opportunity to advance a

student's communication and technical skills, and environmental knowledge, particularly in the area of pollution prevention (P2). The student will be guided by the professional staff from the Pollution Prevention Division, Office of Pollution Prevention and Toxics to learn all aspects of the three P2 websites where a great deal of environmental information is available. The student will become familiar with the policy on pollution prevention, "green" products, industry partnerships, state and local government prevention programs, etc. The student will gain significant experience in computer information technology and environmental communications. The project will improve the current sikills and knowledge of the student in

communications, information technology and environmental issues.

Desired Level of Education: Junior or Senior

Project Location: EPA Headquarters, Washington, DC

Preferred Project Period: June 2002 to May 2003

(12 months)

SponsorInformation: Christopher Kent

Phone: 202 564 8842 Fax: 202 564 8899

E-mail: kent.christopher@epa.gov

Project Number and Category: 2002-5002 Computer Programming and Development

Sponsoring Office: Office of the Inspector General (DIG)

Planning, Analysis and Results

Office Mission/Responsibility: Office of the Inspector General (DIG) conducts and supervises

independent and objective audits evaluations/investigations relating to

EPA's environmental programs and operations.

Project Description: Redesigning DIG Brochure and developing a web page(s) that explains

the DIG mission, goals, and work products that are used to educate

Agency staff auditors and the public.

Project Goals: 1.) Provide the student with a good working knowledge of the Agency

and DIG operations;

2.) Provide the student an opportunity to determine what information

Agency, auditors, and the public would like to know; and

3.) Develop a web page, in addition to preparing/designing the brochure.

Desired Level of Education: Junior, Senior, 1styear graduate student or above

Project Location: Washington, DC

Preferred Project Period: June 2002 - November 2002

(6 months)

Sponsor Information: Michael Binder

Phone: 202 260 9684 Fax: 202 260 4214

E-mail: binder.michael@epa.gov

Project Number and Category: 2002-5003 Computer Programming and Development

Sponsoring Office: Office of the Inspector General (OIG)

Office Mission/Responsibility: DIG conducts and supervises independent and objective audits

evaluations/investigations relating to EPA's environmental programs

and operations.

Project Description: Creating a web page(video) that will provide an executive summary

of OIG reports.

Project Goals: 1) Provide the student with insight as to the type of audits/reports the

OIG conducts in the environmental area;

2) Provide the student an opportunity to develop a web page

(video site); and

3) Provide the public who access the internet site an overview of OIG

reports that may be of interest.

Desired Level of Education: Senior or above

Project Location: Washington, DC

Preferred Project Period: June 2002 - October 2002

(4 months)

Sponsor Information: Yvonne Kinney

Phone: 202 260 0881 Fax: 202 401 8881

E-Mail: kinney.yvonne@epa.gov

Project Number and Category: 2002-5004 Computer Programming and Development

Sponsoring Office: Office of Policy & Management, Policy, Planning and Evaluation Branch

Office Mission/Responsibility: Policy, Planning and Evaluation.

Project Description: The Children's Environmental Health project involves integrating public

health and environmental data to identify where sick children live and where children are at risk from an environmental perspective. By identifying these areas, we can accomplish two goals: remediation, where children are impacted, and prevention, where children are at risk. Critical to these goals is the development of a health database and Geograhical Information System (GIS) tools that can be used to

assess environmental risks to children's health.

Project Goals: The student will work on developing a children's health database and

use GIS tools to assess environmental risks to children's health in Region 2. Student will have the opportunity to apply analytical and computing skills in GIS to help achieve the project goals. Knowledge

of ArcView GIS is preferred.

Desired Level of Education: 1styear graduate student

Project Location: Region 2 - New York City, NY

Preferred Project Period: June 2002 - August 2002

(3 months)

Sponsor Information: Linda Timander

Phone: 212 637 3596 Fax: 212 637 4943

E-Mail: timander.linda@epa.gov

Project Number and Category: 2002-5005 Computer Programming and Development

Sponsoring Office: Office of Research and Development (ORD), National Exposure Research

Laboratory (NERL), Ecosystem Research Division (ERD), Regulatory

Support Branch (RSB)

Office Mission/Responsibility: The mission of the Office of Research and Development (ORD) is to

perform research and development to identify, understand, and solve current and future environmental problems; to provide responsive technical support to EPA's mission; to integrate the work of ORD's scientific partners; and to provide leadership in addressing emerging environmental issues and in advancing the science and technology of

risk assessment and risk management.

Project Description: Develop software to support the simulation of multiple environmental

modeling systems on both a Microsoft Windows based network and a Linux Beuwolf cluster of PCs. This project would allow the student to learn network programming in a number of different operating systems. The models used in the network are written and maintained by

environmental scientists so this project would allow the student to interact with programmers that have decades of programming experience. The resulting software would allow models developed by varied environmental scientists to be combined with other environmental scientists' models to answer questions that are not possible currently due to execution time. Presently, ERD has 100 PCs in a cluster built for the purpose of testing and running environmental models. The student

would spend much of their time with this system.

Project Goals: Development of toolkit including user manuals that allows independently

developed environmental models to be used on a cluster of machines.

Desired Level of Education: Freshman

Project Location: EPA Region 4, Athens, GA

Preferred Project Period: June 2002 - December 2003

(18 months)

Sponsor Information: Karl Castleton

Phone: 706 355 8311 Fax: 706 355 8302

E-Mail: castleton.karl@epa.gov

Project Number and Category: 2002-5006 Computer Programming and Development

Sponsoring Office: Air, RCRA, and Toxics Division

Air Permitting and Compliance Branch

Office Mission/Responsibility: Ensure that air quality regulations, including permit requirements,

are met to improve air quality in Region 7.

Project Description:1.) Convert paper copies of EPA policy and guidance documents into an electronic format that can be used by our policy and guidance

database.

2.) Develop user friendly Windows software to extract information from PDF files such as title, author, and data created in a form useable by other database software to create reports on the contents of the database and also develop software to edit the

contents of PDF files to alter embedded links.

The project will allow the student the opportunity to become familiar with air permitting guidance and improve their programming skills.

Knowledge of Microsoft Visual BASIC is required.

Project Goals: Improve understanding and compliance with air permitting regulations

by providing regulators and the public greater access to policy and

guidance documents.

Desired Level of Education: Freshman, Sophomore, Junior or Senior

Project Location: EPA Region 7, Kansas City, KS

Preferred Project Period: June 2002 - July 2002

(2 months)

Sponsor Information: Don Toensing

Phone: 913 551 7446 Fax: 913 551 7844

E-Mail: toensing.donald@epamail.epa.gov

Project Number and Category: 2002-5007 Computer Programming and Development

Sponsoring Office: Environmental Cleanup Office Emergency Response Unit

Office Mission/Responsibility: Preventing, planning for, and responding to accidental chemical releases.

Project Description:Work with EPA's Region 10 Risk Management program to help reduce the risk of accidental chemical releases.

Step 1: Building an environmental dataset.

Based on a series of environmental policy questions, design complex on-line and in-house data search for facilities that pose certain chemical risks. Search EPA databases, become familiar with the structure of available environmental information, including databases available to the public on the Toxic Release Inventory, Clean Air Act, Clean Water Act, and Emergency Planning and Community Right to Know Act. Search Databases outside of EPA, including state, non-profit, and on-line databases. Work with federal, state and non-profit partners as necessary to build the dataset.

Step 2: **Design searchable database to house the dataset.**Design database, interview potential users, and do all requirements.
Build database in government software environment to house the collected data. Final product should include reports that are usable for federal, state and local partners dealing with potential

chemical releases.

Student will become familiar with a large number of environmental datasets, and will synthesize a broad array of environmental data to answer specific questions about chemical risk. Student should have the opportunity to meet and work with other federal, state and non-profit partners, to learn their data resources and needs. Student will assist the government in understanding the sources of chemical risk, and at the same time will gain experience designing software in a governmental development environment. Student should be highly organized, and have prior database experience (experience with Lotus Notes or Approach is a plus).

1styear graduate student or above

Project Location: EPA Region 10, Seattle, WA

Preferred Project Period: June 2002-August 2002

(12 weeks)

Sponsor Information: Lisa McArthur

Project Goals:

Desired Level of Education:

Phone: 206 553 0383 Fax: 206 553 0175

E-mail: mcarthur.lisa@epa.gov

Project Number and Category: 2002-5008 Computer Programming and Development

Sponsoring Office: Office of Research and Development (ORD)

National Risk Management Research Laboratory (NRMRL)

Technology Transfer and Support Division

Office Mission/Responsibility: Provide technology transfer and information dissemination to

environmental stakeholders, and track and manage environmental

information.

Project Description: The student will be trained on building a searchable database of

environmental products and taught to develop writing projects for

information dissemination.

Project Goals: To learn to manage environmental information, developing a database.

The student will also develop writing skills and learn about environ-

mental technology transfer.

Desired Level of Education: Junior or Senior

Project Location: Cincinnati, OH

Preferred Project Period: June 2002-September 2002

(3 months)

Sponsor Information: Lynnann Paris

Phone: 513 569 7672 Fax: 513 569 7585

E-mail: paris.lynnann@epa.gov



Application Materials

Please photocopy pages from this section as needed. Remember to submit one original and three copies of each form/document required and attach the appropriate application check sheet.

Please complete and submit one check sheet per NNEMS project application. This form may be photocopied.

APPLICATION CHECK SHEET – GRADUATE LEVEL

Project Applied For #2002	If you are applying for more than one project what is your preference for this project? of Total Project Applications	t,
Applicant Information		
Name:	_	
School Attending:	_	
Current Mailing Address:	Permanent Mailing Address:	
Current Phone Number:Email Address:		
General Eligibility		
☐ Currently enrolled in program directly rela	ated to pollution abatement and control	
	k OR four undergraduate courses relating to the environme	
•	cate which status applies):	
Will be enrolled in school for the duration	of the fellowship period	
Expected date of graduation		
Application Data		
Research Project Proposal Form	☐ Original	☐ 3 Copies
NNEMS Disclosure and Waiver Statement	☐ Original	☐ 3 Copies
Resume	☐ Original	☐ 3 Copies
Official college transcript for each school att	ended 🗅 Original	☐ 3 Copies
Letter of reference from a faculty member	☐ Original	3 Copies

Mail Completed Application Package to:

NNEMS Fellowship Program Attn: Applications SOLUTRON, INC. 1395 Piccard Drive, Suite 308 Rockville, MD 20850 Please complete and submit one check sheet per NNEMS project application. This form may be photocopied.

APPLICATION CHECK SHEET - UNDERGRADUATE LEVEL

Project Applied For		
#2002	If you are applying for mo what is your preference for	
	of Total Project	
Applicant Information		
Name:		
School Attending:		
Current Mailing Address: Permane	ent Mailing Address:	
Current Phone Number: Permane Email Address:	ent Phone Number:	
General Eligibility		
Currently enrolled in program directly related to pollution ab	atement and control	
Completed four courses relating to the environmental field		
Completed four courses relating to the environmental fieldU.S. Citizen OR permanent resident (indicate which status a	pplies):	
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Mail Completed Application Package to:

NNEMS Fellowship Program Attn: Applications SOLUTRON, INC. 1395 Piccard Drive, Suite 308 Rockville, MD 20850

NNEMS RESEARCH PROJECT PROPOSAL FORM (SAMPLE)

Please type. This form may be photocopied.

Project Number and Category: 2002	Expected Graduation Date:
Applicant Name:	Major Advisor:
University:	Advisor's Department:
Home Address:	Advisor's Phone:
Applicant Phone:	Best Time to Reach Applicant:

Project Description: Briefly restate the project description. Include the project question, if applicable.

What are the international organizations (i.e. World Bank, Agency for International Development, International Union for the Conservation of Nature) doing to protect wetlands and what more can they do?

Proposed Research Plan: Briefly describe how you would conduct your research on this project.

Some well-placed phone calls can save a lot of time in the library, so my investigation would begin with a week or two of phone interviews with a range of people already familiar with (1) wetland protection issues, and (2) the impact of USAID, World Bank and IUCN policies on environmental media. I would include USAID and World Bank program officers, UNEP officers, UNEP officials, public interest organizations with international environmental programs, and academic specialists, as well as people within EPA.

Then I would select three or four organizations to represent the range of agencies active internationally (Bilateral, Multilateral, Quasigovernmental). I would look at specific programs or projects currently under way at these agencies to assess wetland impact. I would also analyze the organizational structures and political context in which these agencies operate to gain a grasp of how these factors influence their projects on wetlands, as well as the legal authorities of these agencies.

At this point, I would be starting to consider possible changes in the policies that might bring about effective wetlands protection. I would look closely at any environmental protection provisions already incorporated into formal guidelines of these agencies to see if any could be applicable to wetland protection. For instance, USAID requires a type of environmental impact report before its funds can be used to purchase pesticides. The World Bank has guidelines which mandate similar assessment before pesticides are to be used. EPA and State efforts to protect wetlands might also suggest international policy options. Research period is June 1 - August 30, 2001.

Expected Goals: Briefly describe your expected goals.

I would expect my end project to be a report summarizing the impacts these agencies are having on wetlands, along with a substantive analysis of the legal and political factors driving these impacts. The report would also include specific recommendations for policy changes.

Relevant Information: Describe your academic and/or professional experience or interests that qualify you to conduct this research.

Though I do not have a background in wetlands or water issues in general, I have been working for the past five years on international pesticide issues. I am already familiar with some of the mechanisms currently in place at the World Bank and USAID to regulate how their funds are used for pesticides. Last year, I wrote Problem Pesticides, Pesticide Programs and Analysis of the International Code of Conduct on the Distribution and Use of Pesticid es approved in November 1986 by the FAO, as well as a guide on how to monitor for compliance with the code.

Academic Goals: State how you expect this project to support your academic and professional goals.

This project would allow me to gain hands-on experience in international policy as it relates to environmental issues, which dovetails with the Environmental Management program I am pursuing. This real world experience would reinforce the topics I have studied in school, allow me to explore wetlands issues in more depth, and give me crucial background experience to help me find a job in the environmental public policy field upon graduation.

NNEMS RESEARCH PROJECT PROPOSAL FORM

Please type. This form may be photocopied.

Project Number and Category: 2002	
Applicant Name:University:	Major Advisor:Advisor's Department:
Home Address:	Advisor's Phone:
Applicant Phone:	
Project Description: Briefly restate the project description. Incl.	
Proposed Research Plan: Briefly describe how you would cond	luct your research on this project.
Expected Goals: Briefly describe your expected goals.	
Relevant Information: Describe your academic and/or profession	onal experience or interests that qualify you to conduct this research
Academic Goals: State how you expect this project to support y	our academic and professional goals.
Mail Completed Application Package to:	

NNEMS Fellowship Program Attn: Applications SOLUTRON, INC. 1395 Piccard Drive, Suite 308 Rockville, MD 20850

NNEMS DISCLOSURE AND WAIVER STATEMENT

Please complete and submit with NNEMS application package. This form may be photocopied.

I understand that the National Network for Environmental Management Studies (NNEMS) Program fellows are not employees of the U.S. Environmental Protection Agency (EPA) or the U.S. government. Thus, if selected to be a NNEMS fellow, I will not receive typical federal employee benefits including, but not limited to, health insurance, life insurance, annual leave and sick leave.

In addition, I understand that in the event of an accident causing injury to myself while either performing my assigned functions or traveling, the U.S. government is not liable for any injury or harm I may incur. Further, I understand that the U.S. government is not liable for any injury or harm I may cause another person or persons while performing my assigned functions or traveling for EPA. As such, I understand that I am responsible for any injury or harm I cause to myself or others as a result of my actions.

By signing this form, I acknowledge that I fully understand the provisions contained in this statement regarding my status as a NNEMS fellow and the consequences of my actions while working as a NNEMS fellow. As a result, I have considered the possibility of obtaining personal insurance to cover me during my NNEMS fellowship.

Name:	
Home Address:	Home Phone Number:
	Project # Applied For: 2002
	Project Category:
Signature:	Date:

For More Information

For more information write or call:

Sheri Jojokian NNEMS Program US EPA (1704A) 1200 Pennsylvania Avenue, NW Washington, DC 20460

Phone: (202) 564-0452 FAX: (202) 564-2754

Or visit our Web site at:

http://www.epa.gov/enviroed